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DECEMBER, 1961

airlift

WORLD AIR TRANSPORTATION

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5 DEC 1961

FLARESCAN . . . New Approach To All-Weather Operations

In IATA . . . Sharp Knives and Dynamite!

Fare/Merger Issues Are Boiling

At Last! Beacon Maps ATC Plan

The "*super gem*"* Detachable Reusable Fitting
now the USAF standard
field attachable fitting
for hose of Teflon†

*Aeroquip Trademark
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Try This NEW OIL

For prolonged engine life combined with maximum inflight reliability!

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Proven Performance. Phillips *66* Aviation HD Engine Oil has been thoroughly tested and proven in horizontally opposed aircraft engines. Plane owners report clear evidence of its ability to extend engine life. It is among the select few oils endorsed by the leading manufacturers of aircraft engines.

Get new Phillips *66* Aviation HD Engine Oil from your Phillips *66* Aviation Dealer . . . get all the benefit of detergent action for reduced wear, less valve and ring sticking and longer engine life . . . as well as pre-ignition protection.

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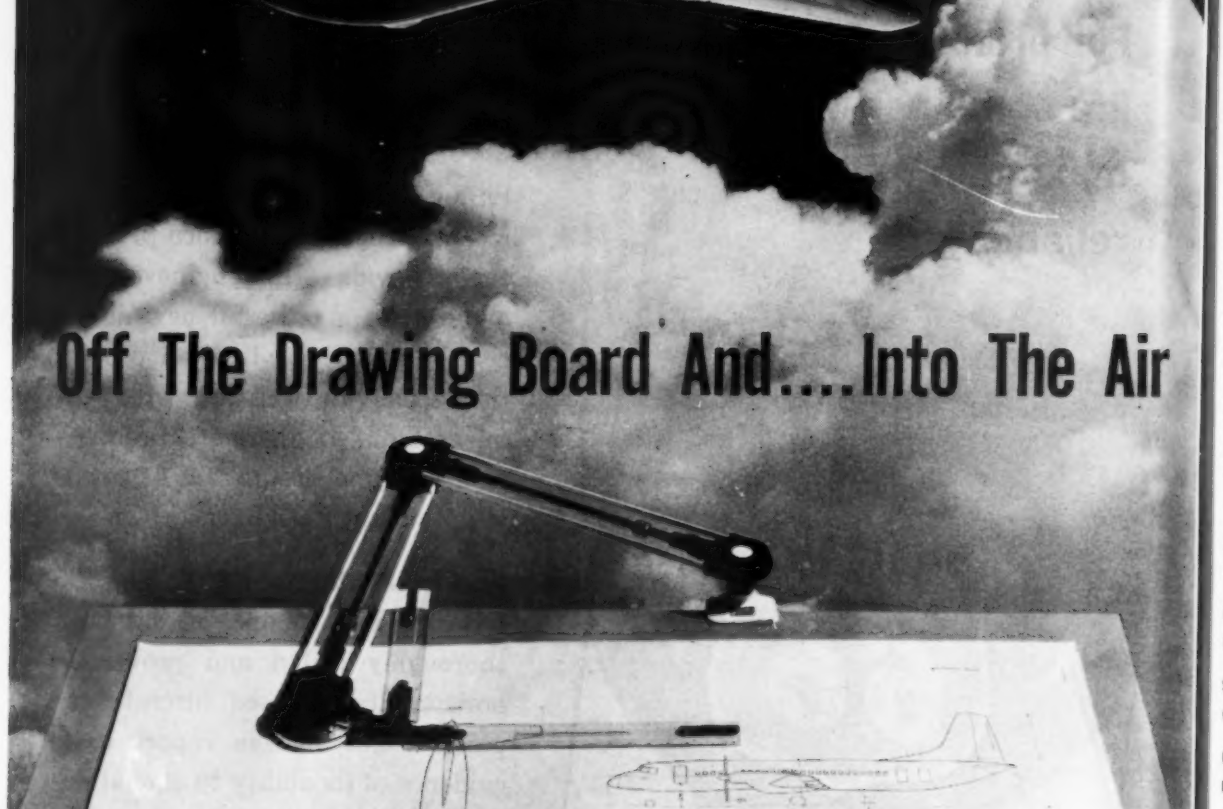
Off The Drawing Board And....Into The Air



From the time that the new YS-11 was first placed on the drawing board, it was decided that emphasis would be placed upon several important features which were missing in similar type airliners. Best economy for short haul operations, with greater payloads and shorter take-off requirements, are combined with the highest standards of safety and performance under all climatic conditions. Added to these, the excellence of the new Rolls-Royce Dart R.Da-10/1 turboprop engines insures top performance. The new YS-11 is now ready to prove all of these points in operation. The prototype is scheduled to fly early next year and production models will be placed on domestic service lines in Japan during the summer of 1963.
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- Runway requirements of less than 4,000 ft.
- Pressurized and Air-conditioned cabin.
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- Superior performance in tropical conditions.

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DECEMBER, 1961—VOL. 25, NO. 7

airlift

WORLD AIR TRANSPORTATION

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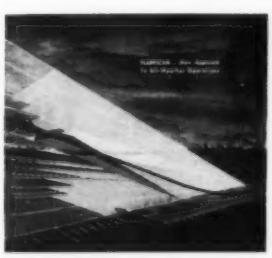

THIS MONTH'S COVER—The latest all-weather landing entry is Airborne Instrument Laboratory's FLARESCAN, graphically portrayed by *AIRLIFT's* staff artist. Aircraft on glide slope (yellow) intersects FLARESCAN sweep (white), receives guidance for flareout path (red line) to touchdown.

20,600 copies this issue

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- 707 Jets—between Los Angeles, Salt Lake City, and Minneapolis/St. Paul
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- Luxury Champagne Flights, Hunt Breakfast Flights, and thrifty Aircoach, too

WESTERN AIRLINES

IATA's 8-hour Working Week

THE 93-MEMBER International Air Transport Association did not fall apart at its 17th annual meeting late in October in Sydney, Australia. Nor did Sir William Hildred, the director general, show any signs of relinquishing the tight administrative grip he has held since 1945. Despite all predictions to the contrary, IATA (and Sir William) have remained quite indestructible. And perhaps this is as it should be.

One can scarcely question the need for an IATA, and very probably one is inclined to overlook the many benefits and achievements through the years. One is even tempted to a certain admiration, perhaps of awe, at dauntless Sir William. The fact is that IATA has held together, there have been no resignations or open cleavages because of policy, and the number of members has continued to increase.

Yet there is a feeling, growing bit by bit each year, that IATA at some point must have a more purposeful annual meeting than a rubber stamp affair replete with protocol and overlaid with an ever-increasing amount of lavish entertainment by which each host airline endeavors to out-do the previous one. It is no wonder that one long-fatigued member referred to the meeting this year as "Sir William's Annual Festival," although it is not the director general, but the host countries, that are going all-out for prestige and honor.

Certainly from the standpoint of hospitality, Qantas, the host airline, reached a new high. No conference has been planned so well in such minute detail. Australia made many friends. And it was a great week for one of Australia's (and the world's) airline pioneers, Sir Hudson Fysh, chairman of Qantas, who has long wanted to stage a show that would be well remembered. In this he succeeded.

But there were delegates who felt guilty about spending a mere eight or ten hours out of an entire week in the so-called "working" sessions. Most airline executives work long hours in their home offices. All of them are faced with enormous problems. The financial state of the world industry is a shocker. The world itself is in turmoil. Yet there was virtually no time allotted or spent in discussing the realistic problems of the day. Even the chairmen of committees who traveled many thousands of miles to Sydney were told to summarize their reports in ten minutes.

Twenty of the 93 member airlines were not represented at all. A third of the executive committee was absent. And a most unfortunate trend continued—too many actual working heads of airlines remained away because the annual meeting has become too much festival and not enough industry discussion and action.

There are signs of an awakening. There was more effort than before to open up the meetings for discussion, more demand for policy determination. Either this trend continues until IATA becomes as vibrant and vital as the age it serves, or the downward trend toward annual wine-sipping national tourist treks to each other's countries will take over the control entirely. We hope the former occurs because there is a truly vital need for an international air transport forum and voice.

It is a tribute to IATA that it continues to exist intact. We would hope that Sir William heeds the dissents, because it is not likely that IATA's isolation from the mainstream of world industry will continue indefinitely.

Innocent Senator Paltridge

IT IS CUSTOMARY for government officials of host airline countries to address the veddy veddy formal opening "plenary" session of IATA, so it was hardly unexpected that Senator Shane Paltridge, Australia's able Minister of State for Civil Aviation, should speak at the IATA meeting in Sydney.

What *was* unexpected was that Senator Paltridge really said something beyond the usual compliments of the day. In fact he said a lot, so much so that it was obvious to all that he must have failed to "clear" his speech in advance with Sir William Hildred and the IATA staff. It has not been considered proper for anyone to speak publicly about serious problems of the industry, or so it would seem.

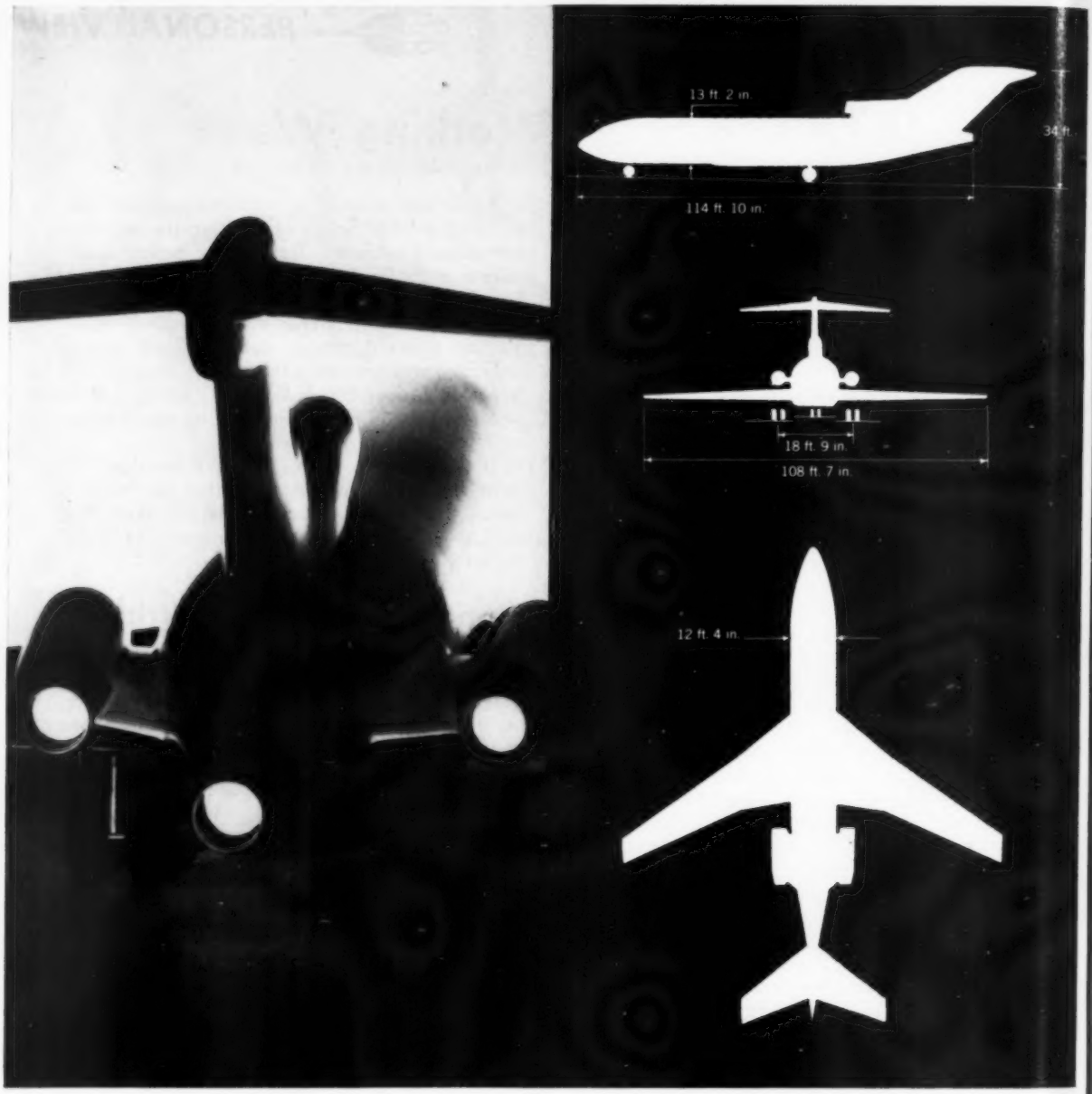
Here are the major points set forth by Senator Paltridge, a knowledgeable public official, and well worth reading:

First, it must be accepted that despite the rapid and spectacular technological development which has been so much a feature of the airline industry, it remains a chronically low profit earner.

Second, although there has been a marked growth in low fare tourist traffic on such "blue ribbon" routes as the North Atlantic, the general world growth of the air tourist market has been disappointingly slow.

Third, although many dire warnings were given by ICAO and others in the middle fifties about the likely consequences of providing jet aircraft in excess of the needs of estimated traffic in the early sixties, the international airline industry today is grossly overprovided with jet aircraft and load factors have fallen to uneconomic levels. This threatens the continued financial stability of the international airline industry.

Continued on page 9



The Boeing 727: a versatile, short-haul profit-maker

The trim new Boeing 727, now entering production, is a versatile airliner designed to operate *profitably* over route segments ranging from 150 to 1700 miles.

The 727's low operating cost will enable it to produce a profit at short ranges, even with modest load factors. Yet its generous cabin space (70 first-class or 113 tourist passengers) results in seat-mile economy on high-density routes, comparable to that of the largest jetliners.

The 727 will be a rugged jet capable of handling frequent landings and takeoffs. A 7000-gallon fuel capacity, plus high allowable landing weights, will enable the 727 to make frequent stops over a long distance without refueling. This and other features, such as an integral passenger stairway, will minimize service time during stops. The 727's quick takeoff, fast climb and near-600 mph speed will result in block speeds never before attainable in short-haul operations.

Already, 117 Boeing 727s have been ordered by American Airlines, Eastern Air Lines, Lufthansa German Airlines and United Air Lines for delivery beginning late in 1963.

BOEING 727

Continued from page 7

Fourth, there seems to be no easing of the almost insatiable demands airlines have made on governments in recent years for the provision of costly and, I suspect, unnecessarily elaborate facilities. This has resulted over the years in necessarily substantial increases in airport user charges and is now having its own markedly adverse effect on airline operations.

Finally, the deteriorating financial position of the world airline industry has caused governments to adopt increasingly restrictive policies in the exchange of traffic rights. The trend in itself threatens to inhibit the growth of international air traffic.

Senator Paltridge said he hoped these points would receive earnest consideration during the week's conference. We hope the Senator wasn't too disillusioned when he found out, as he must have, that his excellent points were quickly brushed under the carpet. But it was a good try.

Wayne W. Parrish

LETTERS

DC-8 Costs Clarified

To the Editor:

The operating costs and statistics which you regularly publish in *AIRLIFT* are very interesting and useful. In your November issue the headline on page 37 is "707 Is Low Cost Performer in 2nd Quarter."

In studying the table I have found it difficult to justify the headline and some statements in the text below. When analyzing the figures given for the columns "Total Operating Expenses" and "Revenue Aircraft Miles," the mean value of the DC-8 total operating expenses comes out as 209.2 cents per revenue mile whereas the 707 cost comes out as 198.8 cents per revenue mile—and not 208 and 193 as stated.

A more correct way of comparing is to use the weighted average (with revenue miles flown by each airline taken into account) which for the DC-8 comes out as 188.2 and for the 707 as 190.2 cents per airplane mile. As none of these figures corresponds to yours, an explanation of your calculations would be appreciated.

B. HOLMER
V.P.-Engineering
Scandinavian Airlines System
Stockholm, Sweden

Editors Note: *The difference in mean values is understandable as our tabulation excluded certain carriers where unusual circumstances distorted the values. The figures were not intended for comparison between types of aircraft, but appearing in successive paragraphs, have been interpreted as such.*

We agree that your approach to weighting the computation presents a more correct comparison and one which we have used in the past in plotting the relative costs of the jets. According to our computations, the five DC-8 operators flew 1[illegible]114,000 revenue plane-miles and averaged 188.6¢ per plane-mile. The five Boeing 707 operators flew 18,247,000 miles and averaged 190.7¢ per plane-mile.

The headline is borne out by Continental's low-cost operation of 707s, although it is significant that United's DC-8 costs, which represent about 67% of all DC-8 operations, were lower than any other 707 operation except CAL's.

Lower Lowest Fare?

To the Editor:

We have just noted on page 13 of the Sept. issue of *AIRLIFT* the following:

"World's lowest air fare is claimed by British European Airways. Starting Nov. 1, company's London-Glasgow-Edinburgh night service will cost $8.82 one-way, or 2.33¢ per mile."

We hereby claim a new world's record for the lowest air fare for SAS/Linjeflyg of Stockholm, Sweden as follows:

Copenhagen/Malmo/Copenhagen—round trip fare $4.90.

V. F. WOOLMAN
Collins Radio International C.A.
Geneva 15, Switzerland

Airport Communications—The flight board pictured in the Pan American terminal at Idlewild (*AIRLIFT*, October) was built by Autophon, not Solari, says B. P. B. de Dube, its designer.

COMING

December

Dec. 4-6—IAS, national aerospace support & operations meeting, Orlando, Fla.
Dec. 5-6—FAA, supersonic transport airworthiness conference, Wash., D.C.
Dec. 5-7—National Aviation Trades Assn., annual meeting, Statler Hilton Hotel, N.Y.
Dec. 13—ATA, board meeting, ATA board room, Wash., D.C.
Dec. 13-14—Airlines Electronic Engineering Committee, general meeting, Wash., D.C.
Dec. 14—ATA, membership meeting, Statler Hilton Hotel, Wash. D.C.
Dec. 18—Wright Brothers Lecture, Smithsonian Institution, Wash., D.C.

Top Events of 1962

January

Jan. 9—ICAO, communications division-seventh session, Montreal.
Jan. 16—Transportation Assn. of America, annual member and board meeting, New York.
Jan. 21-24—Helicopter Assn. of America, 14th annual convention, Marriott Motor Hotel, Dallas.
Jan. 22-23—ALTA, annual meeting, National Aviation Club, Wash., D.C.
Jan. 22-24—IAS, 30th annual meeting, Hotel Astor, New York.
Jan—AAAE, board of directors meeting.

March

Mar. 26-29—IRE, international convention, Coliseum & Waldorf Astoria Hotel, New York.

April

Apr. 1-4—Airport Operators Council, mid-year meeting, Shoreham Hotel, Wash., D.C.
Apr. 6—Air Freight Forwarders Assn., annual dinner and convention, Waldorf Astoria Hotel, New York.
Apr. 9-12—Aerospace Medical Assn., annual meeting, Chalfonte-Haddon Hall, Atlantic City.

May

May 14-16—IRE, national aerospace electronics conference, Biltmore Hotel, Dayton, Ohio.
May 14-17—SAWE, national conference, Seattle.
May 20-24—AAAE, annual business meeting and conference, Los Angeles.
May 21—National Fire Protection Assn., aviation fire safety seminar, Sheraton Hotel, Philadelphia.
May 21-23—ISA, 8th national aero-space instrumentation symposium, Marriott Motor Hotel, Wash., D.C.
May—IATA, 15th technical conference.

June

June 6—IATA, executive committee-53rd meeting, London.
June 10-13—National Aviation Education Council, sixth national conference on Aviation/space education, Benjamin Franklin Hotel, Seattle, Wash.
June 19-21—Aviation Distributors & Mfg. Assn., annual meeting, Ambassador Hotel, Los Angeles.
June 19-22—IAS, summer meeting, Los Angeles.

July

July 16-18—Airways Engineering Society, 2nd national symposium on FAA air traffic control facilities, The Mayflower Hotel, Wash., D.C.

August

Aug. 17-21—ICAO, 14th session of the ICAO assembly, Rome.
Aug. 19-24—Airport Operators Council, annual meeting, Sheraton Hotels, Honolulu.
Aug. 21-24—IRE, WESCON, Los Angeles.
Aug. 22-24—AEEC, annual meeting, Hotel Ben Franklin, Seattle.
Aug. 27-Sept. 1—IAS, third international congress, ICAS, Stockholm.

September

Sept. 3-6—Society of British Aircraft Constructors, annual equipment exhibit, Farnborough, England.
Sept. 10—IATA, 18th annual general meeting, Dublin, Ireland.
Sept. 25-27—NASAO, annual meeting, Bason Harbor Club, Vergennes, Vermont.

October

Oct. 2-4—NBAA, annual convention, Penn-Sheraton Hotel, Pittsburgh.
Oct. 2-5—AAAE & Univ. of Oklahoma, national airports conference, Norman, Okla.
Oct. 21-26—ASTA, annual convention, Las Vegas, Nevada.
Oct. 28-31—National Defense Transportation Assn., annual meeting, San Francisco.
Oct.—ATA, engineering & maintenance conference, Los Angeles.

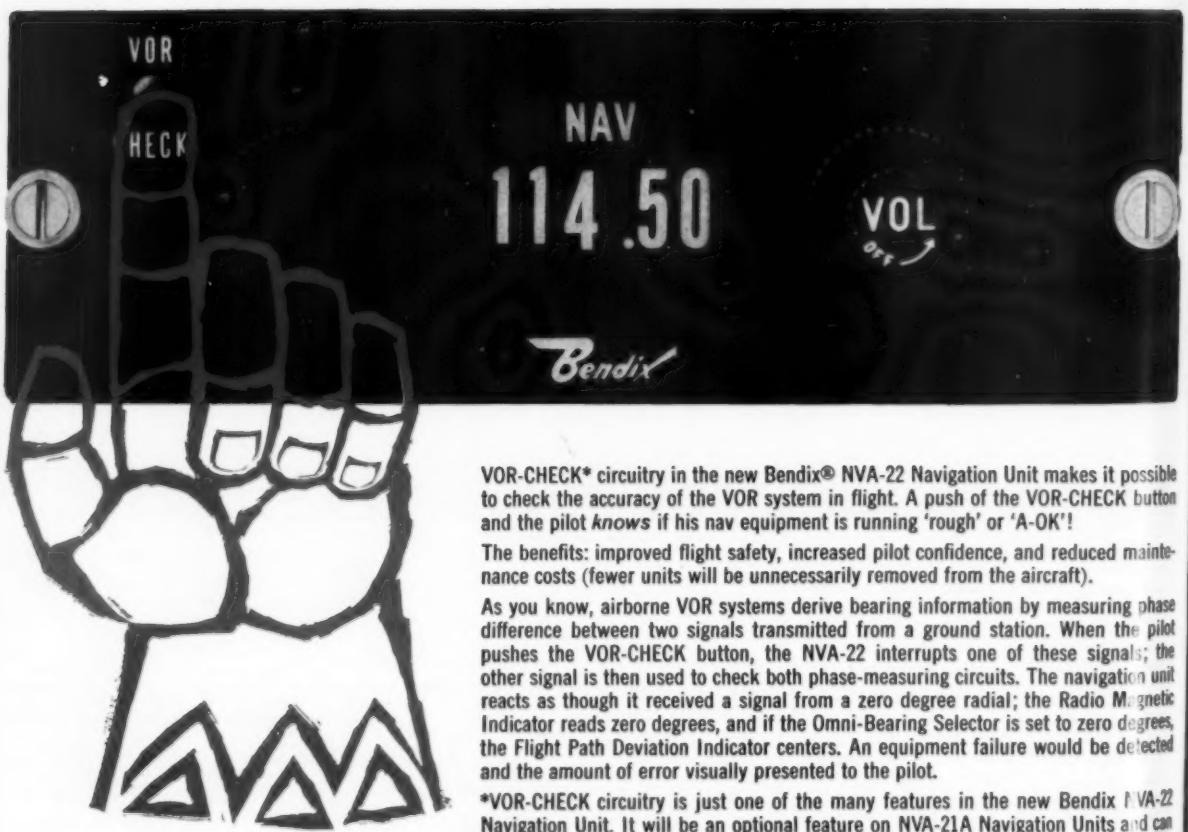
November

Nov.—IATA, technical committee-36th meeting.
Nov.—FEIA, annual convention.

December

Dec. 4-6—AEEC, annual meeting, Hotel Dinkler Plaza, Atlanta, Georgia.
Dec. 17-IAS, Wright Brothers Lecture, Wash., D.C.

CHECK YOUR VOR SIGNALS WITH BENDIX VOR-CHECK!



VOR-CHECK* circuitry in the new Bendix® NVA-22 Navigation Unit makes it possible to check the accuracy of the VOR system in flight. A push of the VOR-CHECK button and the pilot *knows* if his nav equipment is running 'rough' or 'A-OK'!

The benefits: improved flight safety, increased pilot confidence, and reduced maintenance costs (fewer units will be unnecessarily removed from the aircraft).

As you know, airborne VOR systems derive bearing information by measuring phase difference between two signals transmitted from a ground station. When the pilot pushes the VOR-CHECK button, the NVA-22 interrupts one of these signals; the other signal is then used to check both phase-measuring circuits. The navigation unit reacts as though it received a signal from a zero degree radial; the Radio Magnetic Indicator reads zero degrees, and if the Omni-Bearing Selector is set to zero degrees, the Flight Path Deviation Indicator centers. An equipment failure would be detected and the amount of error visually presented to the pilot.

*VOR-CHECK circuitry is just one of the many features in the new Bendix NVA-22 Navigation Unit. It will be an optional feature on NVA-21A Navigation Units and can be retrofitted into NVA-21 series Navigation Units. Write Avionic Products, Baltimore 4, Maryland.

Bendix Radio Division

THE Bendix CORPORATION

AIR TRANSPORT TRENDS

Sales **More Fokker F-27 sales in Africa appear promising.** Shift of major subassembly production from Netherlands to Breguet plant at Biarritz, France, could be helpful politically in selling Air Afrique a batch of the Dutch turboprops for use in African territories that were formerly French colonies. So far Fokker has sold to five African operators; Sudan Airways, East African Airways, Nigerian Airways, DTA and DETA.

Politics **With restrictionism and regionalism on the rise,** U.S. and European operators can expect trouble ahead in Southeast Asia. Future bilateral negotiations probably will aim at restricting fifth-freedom rights of longhaul flights passing through the region. Sector traffic between such points as Bangkok and Hong Kong represent important business to many non-Asiatic airlines.

Competition **The reception is lukewarm among British manufacturers** to attempts by U.S. engine builders to have their jets adopted as alternate powerplants for the deHavilland Trident and BAC-111. But despite the success of the Dart, there are many operators in all parts of the world who still prefer U.S. powerplants. One U.S. supplier, incidentally, has tried for three years to have his product approved for the Dart without success. One barrier he hasn't hurdled is that the item has to be superior, not merely equal to the British counterpart, to justify naming an alternative.

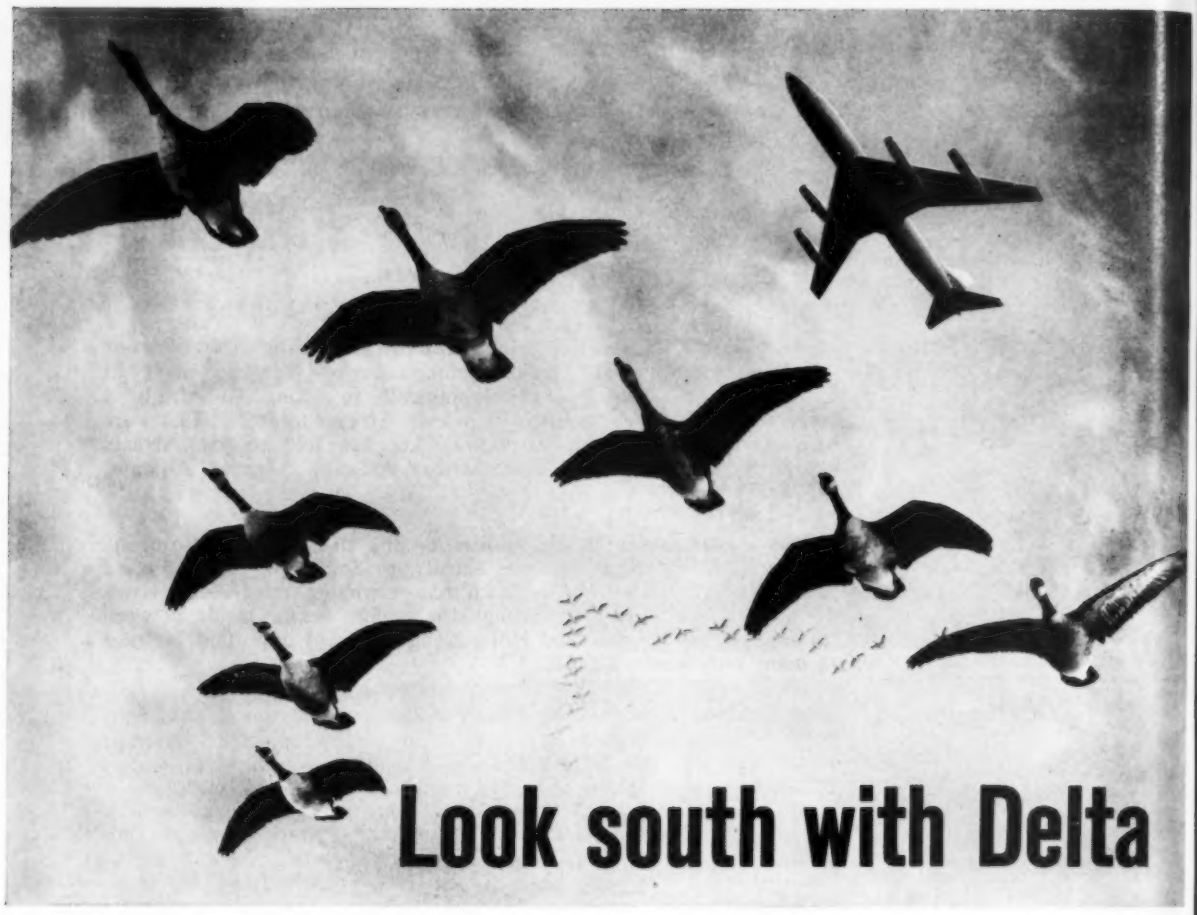
Cargo **There's trouble ahead for C-141 in civil markets,** unless basic airline objections to the big military cargo jet are placated. At recent Connecticut General symposium in Hartford, American Airlines W. W. Littlewood passed it off as unsuitable for domestic use, but possibly of some use on long-range international flights. He says it is compromised toward a basic military purpose. Flying Tiger president Robert Prescott classes it as a military airplane, stressing that the commercial industry should make it clear that the government "isn't doing us any favors by developing it" and that no one is expected to buy it.

Airports **Much-neglected area in FAA under Quesada is being strengthened.** Administrator Halaby has created an Airport Service, equivalent to old CAA Office of Airports, under Cole H. Morrow to oversee airport aid. Morrow's deputy is George Borsari.

Management **Major "comebacks" are rare in the airline business,** but there is one good example in Paulo Sampaio. He was one of the key men in building Panair do Brasil, was then ousted, and is now back as president trying to rebuild the company.

Equipment **Sales arena is broadening** as Japan launches its first effort to market a commercial turbine transport since the end of World War II. Nihon Mfg. Co. this month begins advertising its YS-11 twin Dart-powered turboprop to world markets. Domestic Japanese requirements for YS-11s range from 45 to 61 aircraft through 1971.

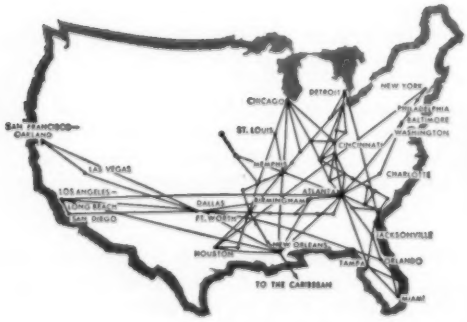
Miscellany **New York's 1964 World Fair doesn't interest U.S. domestic airlines.** Present intention is not to participate. Costs would be very high, benefits doubtful. At best, airlines may put in some kind of a joint ticketing facility. Some non-U.S. flag airlines may have exhibits.



Look south with Delta

Now is the time to make Winter Reservations on Delta's big Jets to Florida

When Arctic outposts advance to the midwest, Delta is ready with a host of fast Douglas DC-8 and Convair 880 jets and other dependable four-engine flights to sunny Florida vacationlands. From coast to coast and border to border, the warmth of Southern Skies clings to Delta wings and experienced travellers know they can count on service in the Delta tradition—personal, quick and exceedingly thoughtful.



General Office, Atlanta, Georgia

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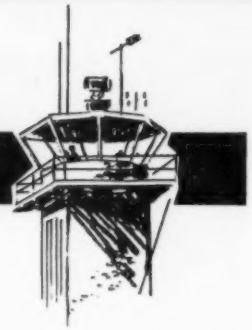
INDUSTRY AT A GLANCE



LABOR

Peace in the cockpit?—In what could prove to be the most significant step toward solution of the costly and harassing issue of jet crew complement, the U.S. Flight Engineers International Assn. (FEIA) has agreed to accept the solutions proposed by the Feinsinger Commission with two qualifications.

FEIA's point one is that the Feinsinger solutions represent recommendations to solve the crew issue, not an arbitration award. Point two is that the FEIA agreement is subject to a similar acceptance by the Air Line Pilots Assn. FEIA officials have agreed to meet with ALPA promptly to resolve any differences between the two unions.

The Feinsinger report recommended a single flight deck union; that the unions should be merged; that ALPA should refrain from legal steps to change representation rights of engineers for a minimum of two years; and, that airlines not be required to operate any four-man jet crews in excess of those existing as of May 24, 1961. Numerous other provisions dealt with training, qualification, seniority and severance pay for engineers.

ALPA presidency up for grabs—After 10 years as head of the all-powerful Air Line Pilots Assn., C. N. "Clancy" Sayen served notice on his many airline master executive councils that he will resign the $35,000 post within the year. The former Braniff pilot and university lecturer deftly dodged every query on his future plans, although several months ago he hinted of an interest to resume a career in education.

ALPA's executive committee, quick to respond to Sayen's notice, passed a resolution to hold its next regular meeting on May 29, 1962 (six months early) to elect a successor. It also voted to retain Sayen as a consultant during the presidential transition for not less than three months. John Carroll, TWA pilot and v.p. of ALPA, stands as a strong contender to become president, although circumstances surrounding the Sayen announcement have been interpreted as warning of a strong play by the ALPA head to block Carroll's election.

ELECTRONICS

Big threat to RTCA—Hopes in U.S. technical circles that the Halaby administration in FAA would be more inclined to use the talents of the Radio Technical Commission for Aeronautics have been shaken. At RTCA's recent meeting, Administrator Halaby in person told its membership that FAA has other avenues for coordination or advice from outside. It has the responsibility to carry the ball, the money, the brains and the know-how.

RTCA's first threat of extinction came in the Quesada administration, but even the anti-coordination instincts of Quesada did not spur him to put the government-industry technical group on the sidelines. However, of all of Quesada's pious list of ambitions carved out for RTCA—jobs FAA was to give it to do—not a single one ever came to pass.

However, the basic need for a Beacon study, the invaluable lost time and the scrappage of millions of dollars of research effort by FAA to date is ample proof, say some industry sources, that FAA or any other single organization, is incapable of "doing it alone."

In fact, they point out, the U.S. was far better off 13 years ago with the work of RTCA's SC-31 than it is today "without a defined system concept of ATC and air navigation."

In the hope that the tide can be turned, RTCA heads have begun to beef-up its technical staff, hire a full time chairman and ask its membership to fund a much more aggressive organization than it has been in recent years.

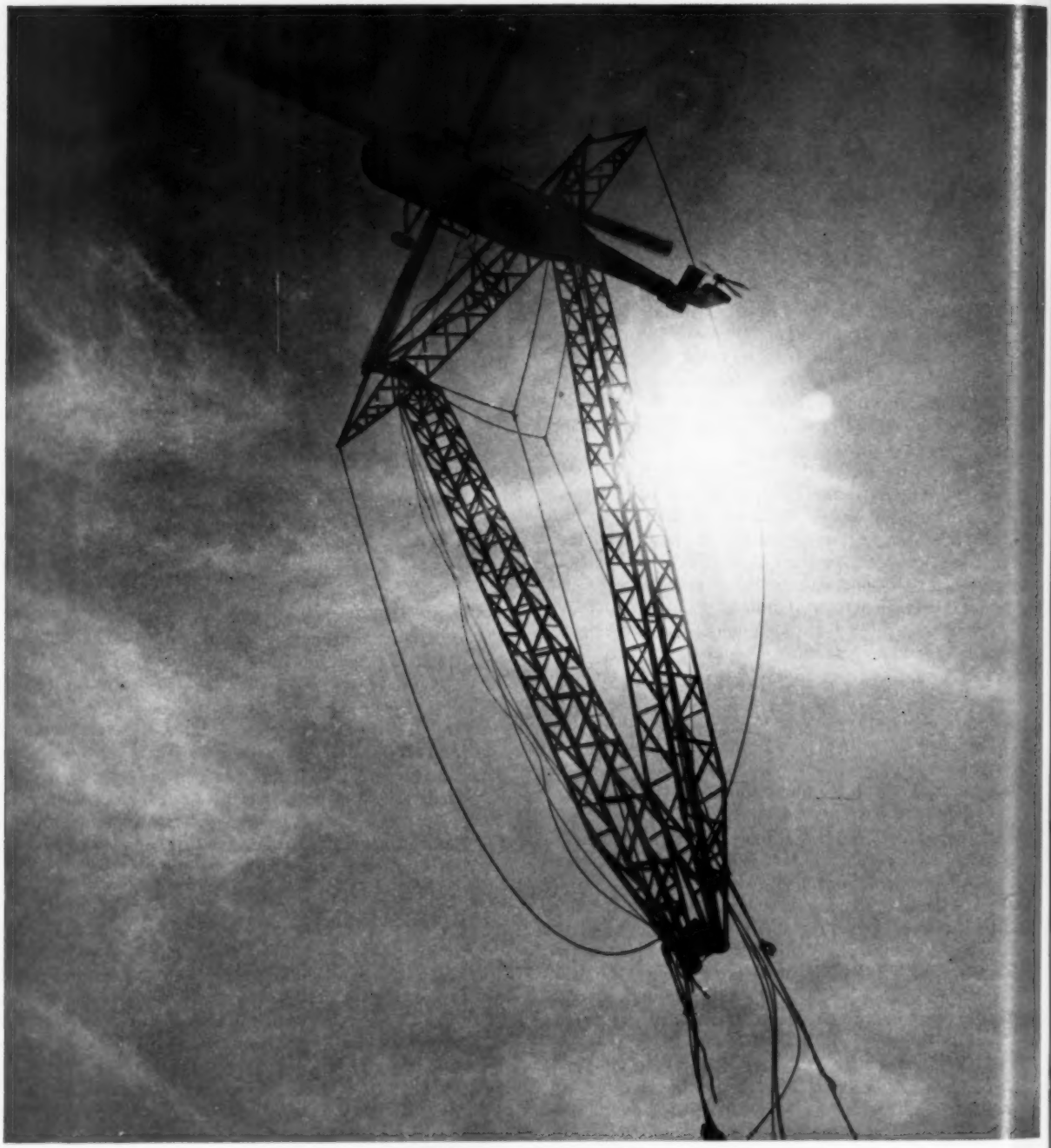
MANAGEMENT

Ted Baker steps up—G. T. "Ted" Baker, president and board chairman of National Airlines since he formed its predecessor taxi airline in 1930, has retired as NAL president and Robert E. Wieland, Baker's nephew, has been elected to the post. Baker remains chairman of the board, chief executive officer and is National's largest single stockholder.

MISCELLANY

A job well done—What might have looked six months ago like just another inbred social gathering in an industry overburdened with meetings turned out to be quite the contrary early last month as Connecticut General Life Insurance Company convened its symposium on "The Issues and Challenges of Air Transportation."

The attendance was strong (about 500), industry's top people were there. But most important, the speakers and panel members had something to say. Although many may long disagree with what was said, there is one point of unanimity: the effort by Connecticut General will stand as a distinct service to air transportation.



Short cut.

We carried the aluminum tower for nearly a mile. Then we eased down, holding it suspended near the ground while it was bolted and guy-wired into place. We released the hook and the tower stood on its own footings ready to be strung with power lines. From the air, we had opened a quick and easy route to tower-setting—eliminating road-building, trucks, and cranes...

The Sikorsky helicopter is replacing many things today. It speeds jet travelers between airport, city, and suburbs. It trucks cargo for industry. The armed forces fly the helicopter as a troop-transport, cargo-carrier and weapon. And people on-the-go in business and government use it as a company car. The Sikorsky helicopter works around the world. The helicopter is a truck is a bus is a crane is a company car. For an exciting story, send for "The Miracle of the Helicopter."

SIKORSKY AIRCRAFT DIVISION OF UNITED AIRCRAFT CORPORATION

UA

Fare/Merger Issues Are Boiling

Speech by CAB chairman Boyd and Continental's new tariff touch off new landslide of opinions on these key issues

By ERIC BRAMLEY

SHOULD FARES GO up or down? Are mergers needed?

These hot questions—on which there is no agreement—have industry, government and financial circles buzzing.

They're brought into the spotlight by the U.S. trunks' present financial plight—losses of $16.9 million in the first nine months of 1961—and by a blunt statement by CAB Chairman Alan S. Boyd.

In industry discussions, in documents filed with CAB, and in almost any conversation between two or more interested parties, related matters are being hotly debated—why has traffic growth slowed down, how big is the airline market, what kind of future growth can be expected, how susceptible is the market to increases or decreases in fares.

Boyd has made his position clear:

Merger: This is probably the best solution to excessive competition—and unless the airlines do something about it, CAB may develop criteria for mergers and determine what carriers should merge.

Fares: "Price increases would be a novel means, indeed, for attracting volume."

As was to be expected, industry officials have widely differing opinions on the merger question (see box).

On fares, three trunks have requested increases, and others are thinking the same way. In addition, the trend is toward elimination of promotional fares, including transcontinental excursion, youth fare, and family plan. The exception is Continental (see fares box), which insists that jet economy service, 25% below jet coach, will pay off.

Some kind of CAB action on fares was expected at *AIRLIFT* presstime. The Board's alternatives are: suspend the tariff proposals and hold an investigation, allow some to become effective and then investigate, allow increases and possibly CAL's reduced fare. Ironically, the Board now is faced with the "fare structure" issue that it did not resolve in the General Passenger Fare Investigation. In that case, it dealt only with what it considered to be a proper rate of return for the carriers.

Boyd, speaking before 500 persons at Connecticut General Life Insurance Company's air transport symposium in Hartford, Conn., said that while he favors mergers, a reasonable degree of competition must remain. "The mergers should result in better integrated route structures and sounder financial condition for the surviving carriers."

He warned that "time may be running out for some carriers to receive what they and their investors consider to be a fair price for merging into other companies. It is altogether possible that financial conditions in the industry may become worse before they become better . . ."

Boyd's view, not CAB's

Unless the carriers act soon, he said, CAB may come up with its own recommendations. "I am not speaking of studies in the abstract. I am speaking of recommendations concerning specific carriers." While CAB cannot force mergers, its can "come up with a report that will disclose the situation in full . . . and recommend corrective action."

Boyd, who noted that he was speaking for himself and not necessarily for the other Board members, also made these major points:

Competition: "I feel that the balance most nearly comes out with two carriers on a route between fairly large cities. In some quite exceptional cases, there may only be one and monopoly is justified. Beyond a certain high density of traffic, or for some other overriding reasons, there may occasionally be justification for three or possibly more carriers on a route."

Routes: "Consideration must be given to route suspensions or transfers," although suspension "is a far less desirable approach" than transfers and mergers. "No doubt some carriers could shed some routes and be better off for it . . . Most carriers would be hurt to lose a trunk route, and our objective is not to hurt them. I strongly urge that . . . each airline examine its own route system, and particularly the peripheries of its present territory, to see

Presidents' Comments on Mergers, Fares

Malcolm MacIntyre, Eastern: "I agree that the possibilities of route transfers and mergers must be explored as solutions to the basic problem. I also believe that, if the carriers are unable to move promptly in these areas, the Board itself should move to initiate suggestions . . . I believe we must price our present services in line with their costs and that means increasing fares."

G. . Baker, National: "With respect to mergers, does our federal government's right hand know what its left hand is doing?" The Department of Justice "obviously believes it is bad for successful railroads to merge in order to improve their earnings. Shall only money-losers be forced into shotgun weddings in an effort to stave off bankruptcy? Such questions are bound to arise whenever government attempts to regulate private enterprise, and when two branches of government cannot agree, utter confusion results."

Charles C. Tillinghast Jr., TWA: A series of monopoly or quasi-monopoly airline markets, or possibly a middle ground between monopoly and today's over-competition, would be the best solution to the industry's ills. Each airline should have a substantial monopoly territory plus other routes on which it would compete. CAB's statements on mergers represent "fuzzy thinking," and the Board should set out guidelines for mergers. Unless the agency is willing to "merge major competitors which would materially alter the competitive situation," it might just as well not act. The optimum point . . . is near the present level, although it may be a little higher than current coach fares.

Donald Nyrop, Northwest: "A series of mergers, drastically reducing the already depleted ranks of medium carriers and concentrating the airline industry in the hands of a few giants, would be neither a cure-all nor in the national interest."

whether or not the traffic flows along the edges of adjoining carriers' territories might not be a fruitful field for profitable route transfers."

Fares: "I shudder at any suggestion that the airlines have already corralled all the people who will travel by air. To sit down and simply figure out on the basis of present traffic volume how much of a fare increase is needed to cover expenses and a reasonable profit is, to me, an exercise in futility and sure death, and not a merciful death at that.

"I would say this even if I were certain that the present traffic volume would keep up at higher rates, and I am far from certain of that. No one will tolerate a public service industry that runs planes half-filled with captive passengers. The industry is all geared up and publicly committed to volume business, and price increases would be a novel means, indeed, for attracting volume. While some fare adjustments, particularly in light of allegations that promotional fares have been uneconomical, would perhaps improve the situation a little, I seriously doubt if the solid answer lies there."

Airline growth, fares and promotional efforts were the subjects of heated discussion at the Connecticut General meeting. Airline passenger traffic has slowed markedly in the last three years, partly because the growth of intercity traffic as a whole has slowed, but mainly because the air traffic component of the total has been roughly unchanged, whereas it had formerly been rising sharply, said Dr. Raymond Saulnier, economics professor at Barnard College and chairman of former President Eisenhower's Council of Economic Advisors.

No big gains from now on

From now on, he said, air travel won't show the big gains of the past but will expand "more nearly in line with the overall growth of the economy." Economic growth should be about 3.4% during 1960-65 and 4.1% for 1965-70. By 1970, domestic passenger-miles should be about 50 billion, he said. FAA estimate is 55 billion.

Other officials disagreed, claiming that growth will be more rapid. Walter Johnson, former vice president of Capital Airlines and now an advertising executive, stated that bigger gains are possible but that airlines must provide people with the "motivation" to travel. "No amount of price juggling can be successful without motivation," he said. "Can this industry be content with spending its time and money competing for 10% of the market, while little or nothing is spent to persuade the 90% non-user group that air transportation has value or utility?"

Maurice Lethbridge, executive vice president of Eastern, said his company expects a 5% growth compounded per year for the next 10 years. Still another executive of a major trunk told *AIRLIFT* that, at present, his 1970 estimate for the industry agrees with Saulnier's.

Lethbridge also stated that Eastern's reduced-fare air bus from the midwest to Miami has generated 15% to 20% of its traffic from passengers who would have used auto, and that 9% to 17% of passengers are first-riders.

In filing the 25% reduced-rate economy service, Continental president Robert F. Six said the service is aimed directly at automobile passengers. The way to broader markets and higher profits lies in offering jet service at prices comparable to surface transportation, particularly auto travel, he added.

Showing the wide split of opinion in the industry, another trunk official told *AIRLIFT* that the air travel market is almost completely inelastic. A fare increase, he said, will not adversely affect business, and it is not possible to lower fares enough to open new markets.

Former CAB head disagrees

At odds with Boyd on mergers is Donald W. Nyrop, president of Northwest, who prepared a paper for the Connecticut General symposium, although he was unable to attend. Instead of considering mergers, CAB should make every effort to strengthen the medium trunks, he said. These carriers, he warned, are in danger of "being caught between the upper millstone of the four major trunklines and the nether millstone of the local service carriers."

In one of the most outspoken criticisms of the locals, Nyrop stated that these lines have engaged in a sustained drive to submerge the original reason for their establishment "and to move up into . . . regional trunks . . ."

"The locals seek to alleviate their subsidy requirements by obtaining access to larger markets where they will compete directly with trunks."

Nyrop also warned against allowing Pan American to enlarge its international competition against smaller U.S. lines. In 1959, PAA carried 61% of all traffic carried by U.S. international flag lines, he said, adding that giving the dominant carrier further authority to compete "is choosing the path to a chosen instrument as surely as if that were the fixed objective of the government."

Equally outspoken was Mohawk president Robert Peach. He gave strong endorsement to third-level service for communities where traffic volume justifies seven and eight passenger twin-engine planes "rather than 50-passenger transports." But, he warned, if these carriers are saddled by FAA, CAB and Railway Labor Act with the same maintenance, flight control, communications, legal, reporting and labor costs as are locals, "the subsidy bill will skyrocket."

Peach favored promotional fares that reach new customers, but opposed propositions which dilute the fares of those who already travel. "This isn't market development. It is economic suicide which can only lead to a demand for higher and higher fares." ■

How They Feel About Fares

United: Integration of jet surcharges into basic jet fares, a 5% increase in piston and jet coach fares, addition of $1 to all one-way tickets, first-class piston fare on an equal level with jet, elimination of night coach fares. Changes would have meant $27.5 million more revenue in 1961.

Continental: Jet economy service 25% cheaper than jet coach. Food would not be served, but meals would be available at major CAL terminals. Company plans to use TECO plastic contour-molded lightweight seats in economy class. Seating arrangement in 707s would be 28 first-class plus six-seat lounge, 36 coach, 75 economy.

National: Increase jet coach fares from 75% to 85% of first-class. Also filed Local Star Bus fare competitive with Eastern's air bus, using 87-seat DC-7Bs.

Eastern: Increase jet coach to 83 1/3% of first-class, with jet fares to be published as a single price rather than basic fare plus surcharge. A 5% increase in all other fares except air bus and air shuttle, and elimination of family plan. Elimination of food and alcoholic beverages on coach flights. EAL proposes that CAB could suspend the changes after they had gone into effect if future results show they are producing more than a reasonable rate of return. The changes are estimated to produce $14.6 million revenue in 1962. Elimination of coach food and beverage will save $4 million. EAL asked to increase New York-Boston and New York-Washington shuttle fare by $1 per ticket.

TWA: Plans to file fares about the same as Continental's economy service, but on piston aircraft only.

Low Costs Stir Belfast Market

Swing-nose freighter, due to fly in '62, will fly transatlantic with 50-ton payload

LONDON—Amazingly low operating cost is likely to arouse considerable interest in the civil version of the Short Belfast transport. Short Brothers & Harland is currently working on an order for ten of the military version for the Royal Air Force and the prototype of the Tyne-powered transport is scheduled to fly before the end of next year.

The civil version of the Belfast will be an aircraft with transatlantic range capable of carrying payloads of up to 100,000 pounds at an operating cost of between four and five cents per ton-mile.

Designated the SC.5/31, the civil Belfast is a swing-nose two-deck aircraft. The lower floor is formed of removable pallets carried on four lines of roller conveyors. A second group of pallets can be inserted on lines of rollers along the fuselage walls. As an all-freight transport the Belfast can carry 60,000 pounds of cargo on the lower deck and 40,000 on the upper deck.

For passenger/freight operation, the aircraft can carry 60,000 pounds of cargo on the lower deck with 141 passengers accommodated "upstairs." Powerplant of the civil Belfast will be four Rolls-Royce Tynes of a more advanced version than the 5730-ehp R.Ty. 12 model which will go in the military version currently under construction.

Military version for RAF

This military version being built for the RAF, designated the SC.5/10, has a takeoff weight of 220,500 pounds. At this weight it can take off in a balanced field length of 7400 ft. to full civil performance requirements. It can carry its capacity payload of 81,000 pounds over 950 statute miles at 340 mph, with 20% fuel reserve. With a capacity fuel load of 80,720 pounds, it can carry 20,000 pounds of payload over 5200 miles at 340 mph, again with adequate fuel reserve.

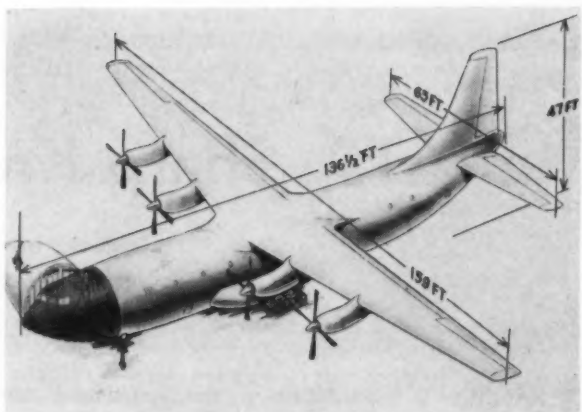
The military version has a rear ramp door plus a large loading door on the port side at the forward end of the fuselage. Including the ramp, the cargo compartment of the fuselage is more than 80 ft. long and has a maximum height of 13 ft., a floor width of 12 ft. and a maximum width of 16 ft. 1 in. A removable floor enables an upper deck to be added over any section forward of the wing.

The level floor, which extends to the hinge of the loading ramp, is 63 ft. 4 in. long and 12 ft. wide. Over the greater part of this length the cargo hold is 13 ft. high; where the main spar crosses the roof it is 12 ft. high. There is a rectangular cargo section comprising more than 11,000 cubic ft., apart from the additional stowage provided at the sides by the curve of the fuselage walls.

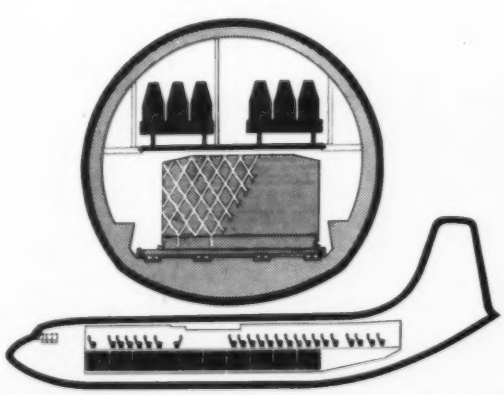
Behind the level hold a further 21 ft. of cargo space is

Short Belfast—Civil Version

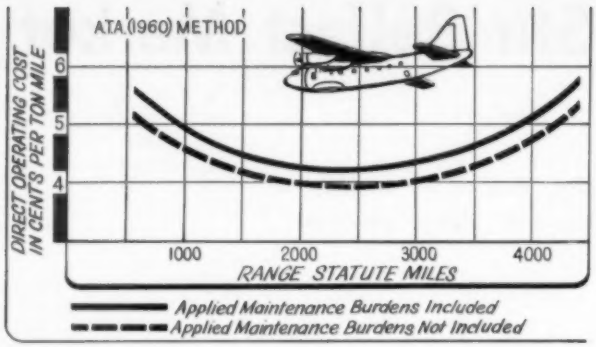
Span	159 ft.
Length	136 ft. 5 in.
Height	47 ft.
Fuselage diameter	17 ft. 7 in.
Net available cargo volume	11,000 cu. ft. approx.
Wing area	2466 sq. ft.
Aspect ratio	10.22
Operating weight	130,000 lbs.
Gross weight	294,000 lbs.
Landing weight	250,000 lbs.
Fuel capacity	96,000 lbs.
Capacity payload	100,000 lbs.
Max. cruising speed at mean weight	387 mph
Range with 80,000-lb. payload	4150 st. mi.



HIGH-WING DESIGN provides straight-in, truck-level loading, of freight while upper deck can be used for passengers.



SIX-ABREAST SEATING with room to spare is possible in wide cabin which measures 16 ft. 1 in. overall.



DIRECT COST of Belfast hovers just above 4¢ per ton-mile for all ranges from 1500 to 3000 miles.

available in an area that is 12 ft. wide. With the slightly upward slope of the ramp door, which forms the floor of this section, the height gradually diminishes from 13 ft. 4 in. to about 8 ft. 6 in.

Another version of the Belfast, the SC.5/20 is projected for tactical use. Using more powerful Tyne engines and propellers of 18 ft. instead of 16 ft. diameter, it has an improved fuel performance enabling it to take off at its maximum weight of 220,500 pounds to clear a 50-ft. obstacle in 4200 ft. This version could carry a payload of 60,000 pounds over 2000 statute miles and on a mission of 1700 miles radius can deliver 40,000 pounds at a mid-point landing.

As a troop transport, the SC.5/20 version of the Belfast can carry 159 passengers with seats at 35-in. pitch. For casualty evacuation, it can accommodate 56 litter cases, 48 walking casualties and 8 medical attendants. ■

In IATA: Sharp Knives and Dynamite!

Retiring traffic conference chairman bluntly warns airline heads of 'brinkmanship' which threatens IATA

TRAFFIC CONFERENCES of the International Air Transport Assn. are highly confidential. A member who divulges even the scantiest of details risks a heavy fine. The positions of members on the issues at hand are tightly guarded by this leakproof cloak of secrecy.

But guarded, too, from exposure has been the intrigue of individuals to gain some selfish end or to block the aims of another, the power plays or stalling tactics, the apparent agreement in some quarters to disagree and stall industry action.

Even the degeneration of conferences in recent years into long, drawn out debates on small matters has not been exposed. At least, not until the heads of airlines met recently in Sydney, Australia, for IATA's 1961 annual general meeting. For there, in explosive fashion, the lid came off.

The dynamiter of IATA composure was V.H.L. Dubourcq, senior v.p. of KLM and retiring composite chairman of IATA traffic conferences. In one of the most blunt critiques ever generated from an IATA session, Dubourcq produced this "must reading" for airline heads the world over:

"I find there is little enough of an industry approach left today in IATA. We are all too aggressive, the knives are too sharp. If we live by the sword we shall perish by the sword. Indeed, the industry is so dynamic, is so changing that we must be on our toes; we must be tough; we must be aggressive; but, I question whether, for the good of the industry and for the good of our own companies, we are not over-doing it in IATA conferences.

"What is lacking in IATA conferences is the spirit. They are a good, well-manufactured and well-designated bit of machinery which works equally well and safely on JP-4 or kerosene. But we are filling it with dynamite."

Of IATA conference strategy, Dubourcq observes, "an art of brinkmanship has developed, based on the idea that your opponents cannot afford an open rate situation and will give in if you threaten it for long enough and are obstinate enough in maintaining your viewpoint.

"This was all right to begin with on a really serious issue such as to force the introduction of tourist or economy class, but everyone now has learned to play this game. You come forward at the first low-level committee meeting, and in the press even, with a position you do not want and which might even be catastrophic to you if it were accepted, but this then makes it possible for

KLM'S V. H. L. DUBOURCQ—He's had enough as composite chairman of IATA's traffic conferences.

you to show how much you have compromised when eventually discussions lead to the position you really want.

"By now companies' positions on the more important issues are fairly well known and this sort of gambit does not fool anyone, but yet it consumes a lot of time . . . the more so since it leads everyone to follow the same tactic, but perhaps one point further removed from their real position. And one day, some one will over-reach and it will be the end.

Big talk, small issue

"I do not know what the remedy to the difficulties will be," says Dubourcq. "I had thought the good example of major operators might lead to more sincerity and truth in negotiations, but sometimes it is the larger operator who is the biggest blaackmailer of conference time and on minor issues. I can remember a major operator who would not increase a $600 fare by even one dollar and debated the matter hotly for half an hour on the floor. At Cannes, all but nine active members were present, and if all were as intransigent, there would not be a hope of closing a conference at all.

"The problem we are faced with is not a matter that lends itself to debate. It cannot be dealt with by resolution. It is a matter of attitude of mind, of perspective, of being prepared to sacrifice a short-term interest to a major long-term interest, of recognition of the fact that we are nearly at the end of the runway but are not airborne and if we continue we shall crash."

Of the traffic conference chairmanship, Dubourcq says "only a vice president must and can fulfill the job . . . has enough background to see through the maneuvers of his colleagues and not be color-blinded to the many red herrings drawn in front of him.

"He has to have the authority to bully and persuade and needle fellow v.p.s into agreement on their behalf. They accept from one of themselves what they would not from an outsider, knowing that it has been or will be their turn sometime to be firm to the point of rudeness, to lead to the point of dominating, or to be bad-tempered to the point of losing friends and influence for your company."

Dubourcq deplored two aspects of conference statesmanship—the pursuit of minor requirements and the "me too" principle.

Of the former, he said, these are the "old favorites or new ideas of secondary importance dear to the proposer but often not or not yet acceptable to the industry. It is becoming general practice to make acceptance of such proposals a condition for closing the general fares . . . It seems none of your officials believes he has done his duty until he has made a last ditch stand on the last detail . . . has produced strong statements for the record which invite equally strong counterstatements.

Gone the graceful concession

"It used to be that delegates gave in gracefully on the conference floor under slight pressure from the chair. Late threats of an open rate situation might have been whispered in working groups and committees, but never in conference. But nowadays, if a member does not get what he wants, upon a point of detail, he declares he will be unable to close the fares."

Of the "me too" principle, Dubourcq cites the situation of an airline which may have a peculiar position different to all the others. "There are a few such cases," he notes, "but if anyone asks for some exceptional treatment . . . then the other great principle in IATA—the 'me too' principle—is used. Everyone wants to get on the bandwagon. If you do not get on, then nobody else can. However good a case a carrier can put forward for exceptional treatment, he is unlikely to get it."

Of IATA's key point of contention—fares—Dubourcq says "A jet airline is now a status symbol for most every nation. All IATA airlines in some fashion or another have government backing, but with the huge amounts at stake . . . most governments would now rather see their airlines financially independent.

"All airlines, of course, like to announce reductions of fares after a conference. That is a good public relations story, but we will have to realize that a healthy industry must be a profitable industry and that often a one or two percent higher fare level may spell the difference between successful or financially unsuccessful operations.

"Untimely fare reductions may be a serious drawback to a group of carriers. A slightly higher fare level will not destroy the others. There is not any point so serious for anyone as to warrant a threat to destroy IATA, but the threat is made and almost daily.

"Certainly one way of improving the situation has been the decision at Cannes moving toward a two-year agreement on fares and rates. However, the next conference, after a two-year gap, is likely to be all the more difficult unless you as the senior executives can inculcate a greater spirit of compromise in your representatives."

Dubourcq's pointed challenge

Of the tendency to defer decisions from one meeting to another, Dubourcq challenged the heads of airlines at Sydney: "Is this really the best way to handle our problem; is this the most productive method; is this sound administration; is this common sense? Is this really the way you want it to be done, because after all the Annual General Meeting is the final authority in IATA and, if you are not satisfied, it is for you to take the appropriate steps."

Dubourcq predicted that "no hand would go up" if the IATA president asked which airline head would feel he was doing his duty to his company and industry by vetoing basic fares or rate agreements and thus threaten to wreck the IATA traffic conference machinery. "Yet it is not rare," he added, "that your designated representatives say they are under your strict instructions to veto any agreement if your requirements are not met . . . I think that there is no issue of such importance to any company as to destroy this very important mechanism.

"It may be tempting to think so on a short-term basis, but the results are usually expensive, time-consuming and more irritating on your nerves than any advantage that any member could conceivably obtain."

Dubourcq's critique was not without suggestions. "I feel that it would be in their (the major operators) interests to bicker less among themselves, to seek agreement on their common problems through informal discussions off the floor, to avoid making their disagreement as public as it presently is and as dull and time-consuming to all.

"I would recommend that more stress be laid on working groups on the more contentious subjects between conferences, that these be allowed to meet with a view toward reaching unanimous agreement as long as may be desirable, but failing unanimity, that they should clearly outline where opinions differ.

"In the old days," Dubourcq concluded, "a messenger who brought bad news to the Authority was frequently put to death for his pains. I do not fear this penalty from you . . . but I can hardly believe that what I have said will make me popular. But someone had to say it to you if IATA is to continue, and who else but the Composite Conference Chairman." ■

IATA Head Sets Eight Objectives, Sabena Offers Fare Plan for SSTs

Capacity, lower fares, discounting and IATA enforcement were key topics at Sydney meeting

By ANTHONY VANDYK
from Sydney, Australia

EIGHT KEY OBJECTIVES of the world airline industry for the next few years were spelled out at the close of the International Air Transport Association's Annual General Meeting here by Qantas' Chairman Sir Hudson Fysh in his capacity as president of IATA. They are:

- The orderly completion of our current turbine re-equipment program;
- Development of the facilities, devices and procedures for all-weather operations;
- Improvements in air traffic control and navigation facilities which will enable us to use the full performance potentials of our jets;
- Air terminals and ground transport connections which can match the speed and convenience of our services in the air;
- Vastly greater utilization of the airplane for cargo carrying—certainly by as much as 300% in the next decade;
- The lowest possible passenger fares consistent with staying in business;
- A fair, logical and stable basis for assessing charges upon the airlines for the use of airports and air navigation facilities;
- Easement of travel red tape to the point where all the tourist will need to move around the world will be a ticket, a checkbook and an identification card.

The IATA president's first point was a veiled reference to a subject viewed with considerable concern by most delegates—the possibility of the supersonic transport arriving before the airlines are ready for it. Sir Hudson noted that the industry requires "time in which to absorb the enormous capital cost of today's jets and accumulate some reserves to finance the future transition to the SST."

He voiced the feelings of the vast majority of international airline men in saying: "We cannot rush into the supersonic area—and we must not allow ourselves to be rushed into it by anyone else."

A down-to-earth suggestion in connection with the introduction of the SST was made by W. Deswarte, general manager of Sabena. His proposal, referred to the next IATA Traffic Conference Meeting: "Let us suppose that for the SST the companies would agree to charge a fare of, for instance, 50% more than that of first class, with an annual decrease of 10%. In this way, the SST would at first be complementary to the jets. They could then be acquired progressively by airlines without compromising the normal depreciation of the present jets in seven or ten years' time.

SST first-class, subsonic coach

"The financing of the new aircraft, which will weigh very heavily, could be extended over a sufficient number of years. As the number of SSTs in operation increases, as well as the total number of passengers, all first-class traffic could be transferred without increase of fare to the faster of the two equipment types and the jets of today would then take care of the economy traffic.

"Only then would we have a simple and logical fare structure. No more aircraft with an expensive two-class configuration. The fare would represent exactly what is

IATA Shifts to 'Kangaroo Flat'

Half way through the IATA annual general meeting in Sydney, delegates had a day of relaxation. Qantas organized a program of events at "Kangaroo Flat" which included many typical Australian activities. Delegates saw wood chopping by champion axeman, sheep-dog trials, sheep-shearing, a stock whip demonstration and boomerang throwing. The photos on opposite page were taken at "Kangaroo Flat" by Wayne Parrish and Anthony Vandyk.

Candid Photo Coverage at Sydney

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EXECUTIVE COMMITTEE of IATA and principal officers pose before recent session in Sydney. (L. to R.) Stan Krzyczkowski, technical director; A. L. Young, secretary; Louis Lesieux, Air France; Kambo Ishikawa, Japan Air Lines; Dr. E. H. van der Beugel, KLM; G. Obregon, Avianca; Prof. J. C. Cooper, legal advisor; Sir William P. Hildred, director general; Gilbert Perier, Sabena; J. R. D. Tata, Air India; Sir Hudson Fysh, Qantas (and IATA president); J. G. Grove, South African Airways; Dr. H. J. Gorechi, treasurer; Dr. Walter Berchtold, Swissair; John C. Leslie, Pan American; Charles E. Beard, Braniff; and H. Don Reynolds, IATA traffic director. Also attending, but not pictured, was BOAC's Sir Matthew Slattery.

sold: speed, and not such futile factors as seat spacing or food quality, which today bewitch our industry and are of no interest to passengers whose flight lasts less than eight hours."

The Sabena executive concluded: "All other traditional means of transportation have, always, asked the public to pay for the extra expenses involved in greater speed and the public has, always, responded. The manufacturers would benefit, for they would have an assured market for several years and avoid the expenses involved in mass production without a future. The airline companies would at last be able to work on a sound basis."

Another executive who had construction ideas to put before the IATA meeting was B. R. Patel, vice chairman and general manager of Air India. He asserted that there is so much over-capacity on most of the world's air routes that fare cuts are imperative. Patel told *AIRLIFT* that because of the over-capacity situation, old costing standards are meaningless and all efforts must be directed toward finding a new market.

Room for a fare cut

Patel said there is a margin for fare cuts of 10% to 20%. He also said that such reductions would help to eliminate the spreading practice of fare-cutting. Patel declared that fare cutting is taking place over the world, particularly in the area between Rome and Tokyo. He noted that fare-cutting does not necessarily create a new market since the reduction does not always go to the traveler. At least part of the discount tends to go to agents, he pointed out.

The Air India executive called for excursion fares with a longer validity than the 17 days now in effect on the North Atlantic. He suggested that a 30-day excursion fare with a minimum stay of ten days at the destination would be a good move in bringing more business to the airlines without diverting too much traffic which would have paid the ordinary fare.

Fare cutting and enforcement of IATA resolutions were the subject of much discussion at Sydney. One reason was the disclosure of the contents of a letter written in mid-October from CAB Chairman Allen Boyd to Juan T. Trippe, president of PAA.

Serious concern at CAB

The Boyd letter said that the Board was "seriously concerned" about the "serious adverse financial effect of unlawful rate and tariff practices by certain foreign air carriers operating to and from the United States (which) appear to be growing more widespread." The Boyd letter said the CAB believes that developments indicate the need for even stronger efforts on the parts of IATA and its members to ensure compliance with agreed rates.

The CAB demand for more enforcement within IATA was backed up by PAA's John Leslie who suggested that the present maximum fine of $25,000 be doubled and that "task forces" of enforcement officers be established. No action was taken to adopt his suggestions, but the meeting endorsed the executive committee's decision to increase the number of enforcement officers from 24 to 36 and to take new steps to stop breeches by members. IATA's enforcement budget for 1962 is $391,100, up from $372,000 for 1961 and $248,000 for 1960.

Attendance at the Sydney meeting was spotty. Airlines which sent no delegates were Aerolineas Argentinas, Aeronaves de Mexico, Air Ceylon, Air Guinee, Air Liban, Air Mali, Curzeiro do Sul, Cunard Eagle, Cyprus Airways, Delta, Eastern, El Al, Finnair, Flugfelag, Guest Aerovias Mexico, National, New York Airways, Northwest, Olympic, Quebecair, Real-Aerovias, Suidwes Lugdiens, Trans Atlantica Argentina, TCA and Turkish Airlines.

Even the 18-member IATA Executive Committee had several absentees—Lord Douglas (BEA) and G. T. McGregor (TCA), both because of illness, and Ruben Berta (Varig) and Sheikh Alamuddin (MEA). Richard Jackson, president of Seaboard World Airlines, was defeated in his effort to be elected to the Executive Committee as a representative of all-cargo and smaller carriers.

Case History of a Mammoth Charter

TYPICAL GIBSON GROUP was this flight of 147 dealers from Memphis to Panama.

WHEN BRANIFF'S Boeing 707-227 jet touched down at Dallas on October 13 after a 14-minute flight from Fort Worth, the airline wrote into the record one of the most amazing feats in the history of air transportation.

Using a single Boeing 707 (actually two different airplanes but only one at a time) it carried 5034 distributors and guests of Gibson Refrigerator Division of Hupp Corp. from 28 different cities in the U.S. to Montego Bay, Jamaica, then on to Panama and back to their home cities in the U.S., without a hitch.

For 39 consecutive days, flying 168 separate segments, the Braniff jet logged a daily utilization of 11:05 hrs. With an average of three boardings for each of the passengers, Braniff handled 15,000 passengers, flew 200,555 miles for a total of 21 million passenger-miles.

Despite a most exacting schedule which had to cope with the unpredictable week-long influences of Hurricane Carla and bad New York weather, 71% of the charters arrived within 30 minutes of schedule. On only three occasions was major maintenance required—an engine change in Kansas City, a windshield in Miami and a generator in Ft. Worth. As an insurance measure, a spare engine pod was carried on a scheduled flight to Panama a week before the charter started and returned unused under the wing of the first charter to Dallas.

But in retrospect, Braniff's success in handling the massive airlift was no accident. To the contrary, it was largely attributable to the precision of its planning. The Gibson program, by its very nature, demanded that specific groups be at specific places with little or no tolerance for delays and Braniff set out to gear its operation to meet this exacting schedule.

Planning actually began 14 months in advance when Gibson first contacted Braniff in July 1960 and senior v.p. Rex Burck signed the contract two months later in Hawaii. An internal planning committee headed by v.p.-traffic & sales Robert H. Burck, Jr. took over from there.

Probably the best index of the detail of the planning which followed is a 56-page special manual covering every conceivable situation that might develop with instructions on how to cope with it. It took nine revisions, the last on August 2, to keep pace with changing flight schedules and have an up-to-the-minute guide. Its contents would be an eye-opener to any other airline planning big charters.

Every airport on the proposed route was canvassed to insure it could take the Boeing jet. Pittsburgh, for example, had to be canceled because a Jewish holiday (Honaka) make it illegal to serve liquor. Eight special flight manuals were prepared for pilots' kits, making it possible for any crew to pick up a flight anywhere in the U.S. To minimize mechanical delays a maintenance expert rode every flight as a supplement to the regular crew. A 1000-lb. kit of spare parts was also aboard. The aircraft were fitted full length with six-abreast seating for 147 including lounge.

At Panama, ground crews used walkie talkies to speed up communications and ground movement of the aircraft, passengers, and luggage. In many instances the baggage for 147 passengers was delivered in nine minutes.

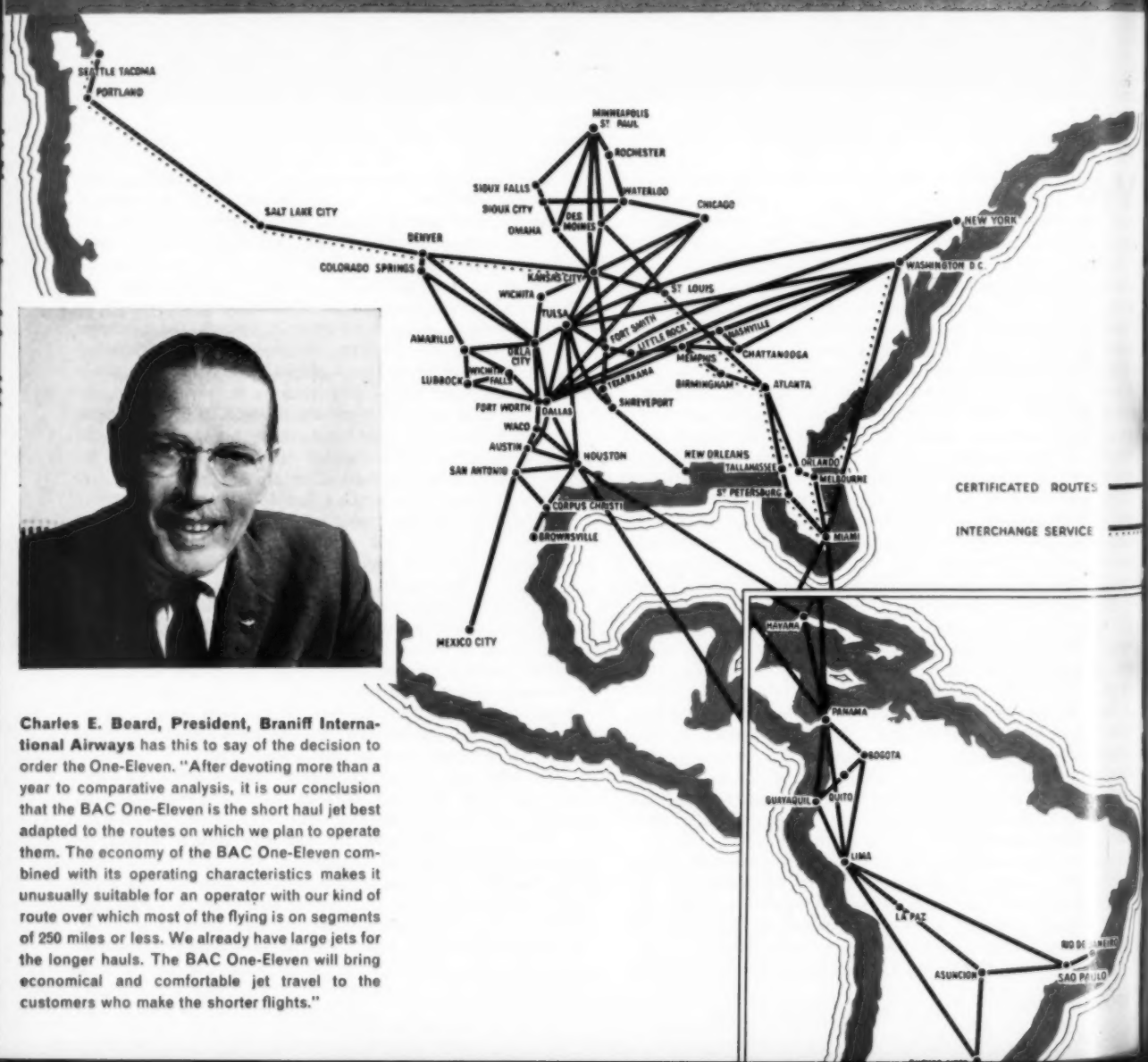
Four special sales reps did two-week stints in Panama arranging, selling and ticketing extension trips to other points in South America. They sold 32 extension trips in addition to 82 requested by Gibson for award winners.

Panama was the catering center for the operation with commissary chiefs from Rio and Dallas each doing a three-week tour. A supervisory purser from Braniff's Latin American Division was aboard each flight.

A charter the size of the annual Gibson affair isn't one an airline can take on without playing havoc with its normal schedule. For Braniff, with a big assist from Boeing in stepping up a delivery, the addition of new aircraft fit the special demand like a glove.

Beyond Braniff's own organization the charter was given some vital assistance via the interline route. Pan Am pitched in at six points, Eastern at five, United at three, Continental at two and both Northwest and TWA boarded one each. ■

BRANIFF *International* AIRWAYS



Charles E. Beard, President, Braniff International Airways has this to say of the decision to order the One-Eleven. "After devoting more than a year to comparative analysis, it is our conclusion that the BAC One-Eleven is the short haul jet best adapted to the routes on which we plan to operate them. The economy of the BAC One-Eleven combined with its operating characteristics makes it unusually suitable for an operator with our kind of route over which most of the flying is on segments of 250 miles or less. We already have large jets for the longer hauls. The BAC One-Eleven will bring economical and comfortable jet travel to the customers who make the shorter flights."

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FOUR ROLLS-ROYCE CONWAY TURBOFAN ENGINES

TGA BVC2E

At Last! Beacon Maps ATC Plan

Controversial report prices future ATC system at $½ billion, more than double that of present five-year plan at FAA

By PHIL GERACI

WASHINGTON—The nationwide airways structure appears destined for some major revisions if the recommendations contained in the long-awaited report of the Project Beacon Task Force on Air Traffic Control are fully implemented.

The report was released Nov. 13. It sets a goal of "five years" as "reasonable and necessary . . . for . . . implementation of the major features of the recommended system." Beacon's price tag: $500 million, or $250 million above the current FAA "five-year plan." The present annual FAA R&D budget of $65 million Beacon considers adequate.

To assist in implementing the features of Beacon's extensive ATC proposal, FAA Administrator Najeeb Halaby has formed a Technical Advisory Board headed by Beacon Chairman Richard R. Hough, vp-operations for the Ohio Bell Telephone Co., with FAA Research and Development chief Joseph D. Blatt as executive secretary.

And within FAA, Blatt has established a "system design team" to carry out the Beacon blueprint in eight operational and five technical areas. Heading the "team" is Albert Brown.

After laboring to meet a July 1 deadline, the Beacon committee's 138-page report was stalled by FAA/Dept. of Defense disagreement on the role of SAGE radars in air traffic control. Beacon recommends the use of air defense radars—combined with FAA radars—only for en route surveillance.

New terminal separation plan

In proposing "A Recommended Air Traffic Control System" Beacon calls for airspace control to "blanket the nation" above 14,500 ft. (24,000 ft. in mountainous areas) with control down to 8000 ft. along high-use airways. Below these levels VFR traffic would be required to observe speed limits.

Equally far reaching is Beacon's recommendation for separation of traffic by performance, particularly around terminal areas. The report details an "off-airway structure of approach and departure corridors" which would provide aircraft segregation "according to capability."

Slicing a 25-mile radius "approach control area" like a pie, the new concept would align jets with the ILS runway, position "intermediate aircraft such as the DC-6, Electra, etc." in the adjoining slice, with "low-performance aircraft," including those operating VFR, in "Corridor No. 3" where they could be "easily maneuvered" to the runway by the local controller.

This would do away with the traditional "downwind leg, base leg and final approach" pattern at high-density airports in favor of one which would orbit VFR aircraft in tight circles at low altitudes near the active runway, working them down between jets and larger piston and turboprop aircraft which would be cleared "straight in" or held farther away in separate holding patterns within their respective corridors.

It came as little surprise that Beacon strongly opposes "three-D" radar as the separation standard for terminal areas. "There is no three-D radar in existence or development which can provide the data needed with accuracy and volume," Hough told the Radio Technical Commission for Aeronautics in a brief preview a week before the report was released.

Hough said the Beacon survey of air traffic control needs for "the next decade" indicates greater use will be made of the radar beacon system to provide altitude as well as lateral separation data. The report recommends that transponders be required on all aircraft of more than 12,500 lbs. gross weight, and urges development of a "low-cost transponder" to be tagged at "under $500" for use primarily within the terminal area control zone.

Soft on collision avoidance

Collision avoidance also received little encouragement. Hough said present equipment either is "too expensive" or "marginal in performance." The report notes that collision avoidance should be regarded as "an adjunct to the air traffic control system rather than a primary tool."

To meet a need for immediate action, the Beacon report calls for the following "short-term improvements": segregate VFR and IFR aircraft in the terminal areas; segregate aircraft in terminal areas by performance; require all aircraft landing at high-density terminals to contact approach control; expedite delivery of improved radar presentations; implement results of research into aircraft conspicuity; increase use of computers in ARTC centers and automate handling of flight plans and clearances.

The report also offers recommendations on airport standardization in such matters as lighting and navaids; calls for continued research into all-weather landing; urges action to make weather reporting more streamlined and efficient; and underlines the need for continued monitoring of ATC facilities by FAA.

VFR, IFR, now CVR

A new category of flight—Controlled Visual Rules (CVR)—was proposed to permit noninstrument-rated pilots to enter the traffic control system and receive separation data while maintaining aircraft attitude "by reference to the ground."

The report notes that the present nationwide system of VHF omni-range stations, with the addition of DME, will be "adequate for many years over most of the country" but calls for "a more precise navigational means" to permit closer paralleling of airways.

Need for "special navigation facilities" in some terminal areas was urged "in the very near future to permit efficient helicopter operations." Noting that "the inauguration of IFR flying by helicopters is close at hand," the report recommends the establishment of "express routes" for helicopters through high-density terminal areas.

Similarly, the report recommends the establishment of "special corridors and tunnels . . . for unequipped VFR aircraft landing at uncontrolled airports or transiting the terminal area." ■

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The CCT, Ideal Shorthaul Concept

Eland Convair with integral auxiliary power unit becomes the first 'Complete Commuter Transport'

TOTAL ABSENCE of ground equipment (left) distinguishes CCT from Convair not fitted with auxiliary power (right).

THERE'S A NEW BRAND of transport on the airline scene, the CCT—Complete Commuter Transport.

Like its more glamorous alphabetical counterpart, the SST or supersonic transport, it only produces revenue while it is airborne. It, therefore, must be designed to cut to a bare minimum the time required on the ground for taxiing, loading and servicing.

The CCT must be easily maneuverable on the ground for rapid movement from gate to runway. It must be capable of loading and discharging its payload in the least possible time using as little supporting ground equipment as possible.

The elimination of ground servicing vehicles is a must for a true commuter type aircraft.

The first truly CCT aircraft slipped into airline services without fanfare in recent months when Quebecair in Canada and Allegheny in the U.S. began operating specially-equipped Convair 540s. Quebecair has three, Allegheny one. N544Z, Allegheny's CCT, outwardly looks much like the other four 540s which preceded it into operation.

Upon closer examination, however, there's a big difference. Louvres in the tail stinger are the only sign that N544Z houses a small turbine auxiliary power unit. As the 540 taxis toward the gate, there is no need to jockey through a parade of ramp-cluttering ground equipment. The CCT is self-sustaining on the ground and in the air.

When this CCT lands and starts to taxi toward the terminal the pilot flips a switch which starts the turbine power unit in the tail. It, in turn, automatically energizes the airplane's ground service and air conditioning power supply.

Permits fast stops enroute

The 540's turboprop Napier Eland engines give it the fast and positive control so necessary for quick maneuvering in and out of airports in a commuter type operation. The aircraft is easily positioned at the gate and as the engines are shut down, the integral passenger ramps lowered to the ground so that passengers can disembark immediately.

The tail power unit, meanwhile, is supplying ground electrical power and air conditioning thus dispensing with the need for outside servicing trucks or carts which require trained personnel and expose the aircraft to expensive ground damage.

The CCT 540 is capable of multistop operation without refueling on most commuter runs. And as most commuters favor carry-on baggage, there is virtually no need for outsized ramp equipment of any kind at enroute points.

Once loaded and "closed up," the stinger-mounted APU supplies pneumatic power to start the Eland engines. The aircraft is quickly on its way with the main engines taking over from the power unit until the cycle is repeated at the next stop.

No ground servicing vehicles

Thus the addition of this small turbine power unit releases ground crews from their past assignments to concentrate on other operating functions. Ground time is reduced. The two minutes or so required to position ground servicing vehicles are saved, as are the few minutes before departure when this gear is disconnected and moved away from the aircraft.

The first CCT, N544Z and its Quebecair counterparts have a flexibility not found in other airline transports. Usually, new services require capital investment in many items of support equipment in advance. With the CCT, operations can commence almost immediately because virtually all ground servicing needs are built into the aircraft.

The advent of the self-sustaining airplane is a major milestone in the development of air travel. It is a big step in the direction of improved service to the traveling public, one which reduces overall travel time on the ground and in the air.

The stage has been set for the incorporation of this same feature in all new transports produced for short and medium haul services. Only high hourly costs are impeding general acceptance by prospective 540 customers.

But even this obstacle may be erased by the forces of competitive systems. An alternative to the AiResearch pneumatic power unit is being offered by Vickers, Inc. for the 540. It would provide a hydraulic engine starting system in addition to supplying electrical power and cabin cooling services. ■

SAFER JE A

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WORLD'S FASTEST "RUNWAY" for advanced testing of aircraft tires is Goodyear's new multistage dynamometer system. First to simulate most accurately all tire operating conditions, system qualifies tires up to 320 mph, and advanced testing at 500 mph. Today it's checking out designs for 1970's tires.

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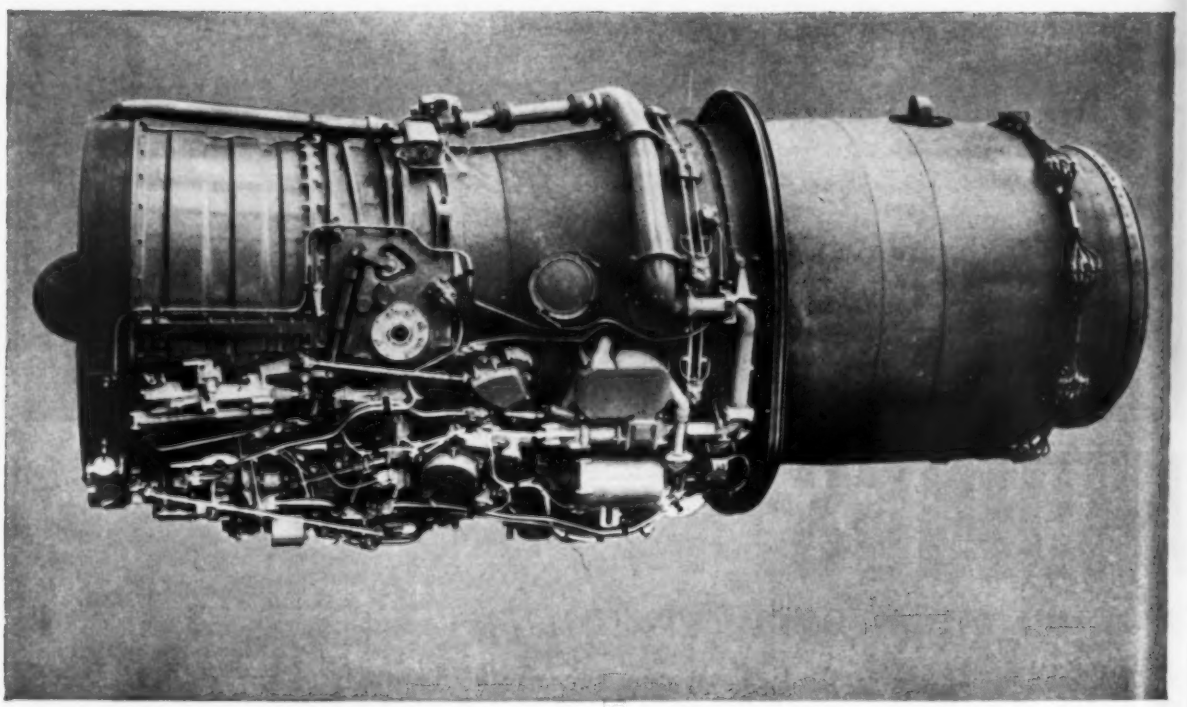

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TECHNICALLY SPEAKING

By Joe Murphy

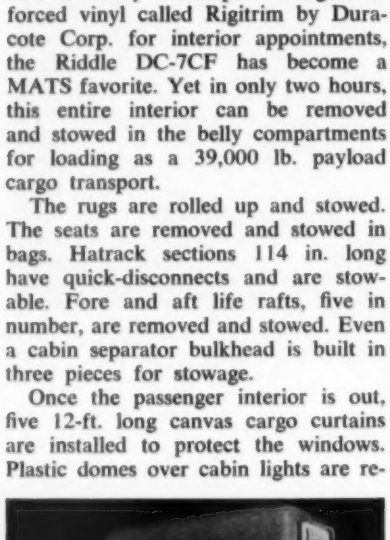
Interiors, Airport Models and Safety

A classy interior—Lots of people have talked about it in the past, but we have yet to see the equal to what Riddle Airlines and Charles Butler have devised in a true passenger/cargo convertible interior. The Riddle DC-7CF interior is "recommended seeing" in our book for anyone dealing in quick conversions whether for routine operations, civil reserve airlift or what have you.

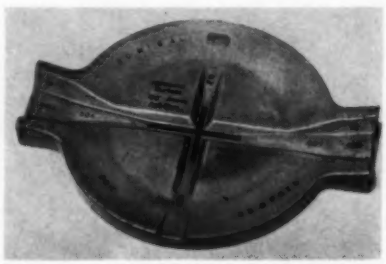
As a 99-seat passenger layout with special Burns naugahyde covered seats and a newly developed fiberglas-enforced vinyl called Rigitrim by Duracote Corp. for interior appointments, the Riddle DC-7CF has become a MATS favorite. Yet in only two hours, this entire interior can be removed and stowed in the belly compartments for loading as a 39,000 lb. payload cargo transport.

The rugs are rolled up and stowed. The seats are removed and stowed in bags. Hatrack sections 114 in. long have quick-disconnects and are stowable. Fore and aft life rafts, five in number, are removed and stowed. Even a cabin separator bulkhead is built in three pieces for stowage.

Once the passenger interior is out, five 12-ft. long canvas cargo curtains are installed to protect the windows. Plastic domes over cabin lights are removed. The rest of the interior, including curtains, stays in place. And this is not a theoretical convertible cabin. In recent months Riddle's operation involved the complete switchover from passenger to cargo or vice versa at the rate of one or two aircraft a day.



EMERGENCY PA SYSTEM being developed by Aerotec has its own power source but uses aircraft's cabin speakers.



NEW AIRPORT MODEL is visual aid to engineers, commissions and planners in interpreting traffic standards.

Airport model—One of the more clever devices we've come across is 3-D model of the prevailing airport traffic standards invented by J. H. Perry, Vienna, Va. for use by airport engineers, commissions and municipal officials. It comes in bronze and aluminum, weighs 20 ounces and sells for $4.50 plus postage. Perry has sold more than 400 and one law firm from Oklahoma City credits it with a court victory on a zoning case it handled.

For improved safety—Aerotec Industries, Inc. is developing two new safety devices to be marketed soon to the world airlines for improved passenger evacuation. One is a 1.5 g inertia sensing switch which can be added to existing emergency lighting systems of the "power failure" type to guarantee the availability of lighting whether or not a power failure occurs.

On most existing aircraft, emergency lighting operates only after power failure or cut-off and on at least one occasion the absence of a failure left evacuees without emergency lighting.

The other Aerotec development is a permanently-mounted, transistorized power pack wired into the existing cabin public address system to provide necessary communications when the aircraft electrical power has been cut off. The new unit would be light in weight, employ continuously trickle-charged batteries and incorporate its own microphone for ready use by crew in directing an evacuation.

Odds and ends—Panair do Brasil's recent order for four Caravelles carries a letter of intent giving it a priority position for three Sud Aviation Super Caravelle supersonic transports . . . **Used aircraft brokers** are taking sides in an attempt by a couple of airlines to prove the DC-6A will be worthless in three years and thereby justify a shorter write-off period. But others, including CAB, feel the DC-6A will still be in demand in 1964. There'll be some red faces when the details turn up.

New nickname for the 707 which over-ran the runway into the bay at Boston: the "Aquajet." American, incidentally, is repairing the aircraft and will have it back in operation in January. It suffered surprisingly little water damage . . . **Frank McDermott,** former exec. director of Air Traffic Control Assn. is consulting on ATC in Washington for a trio of firms, and is offering his services to radio/TV interests as an advisor on "high tower" problems to avoid some of the donney-brooks which arise in this area.

A smart move—The French equivalent of the British SBAC and U.S. AIA, officially called the Union Syndicale des Industries Aeronautiques et Spatiales, has come up with a worthwhile contribution on behalf of its aviation accessory manufacturers. It is a bimonthly equipment news summary in both English and French giving all detailed specifications on major new product developments.

For example, among some 27 items treated in the first edition (Oct.-Nov. 1961) are air data computers by Crouzet, precision altimeters by Jaeger and a static eliminator by Telec. We consider this a much more positive contribution by an association than some publications which dare not mention a member's name for fear of irritating all other members.

For those interested, write USIAS, Equipment Div., 4 rue Galilee, Paris. ■

Potez Outlook–1000 Planes In Ten Years

By FRED S. HUNTER

POTEZ 840 is aimed at airline/exec markets, sells for about $500,000.

The Potez 840 has a market potential of 10 years and 1000 airplanes and Don Payton, president of Turbo-Flight, Inc., forecasts half of them, or 50 airplanes a year, will be sold in North America.

The Potez 840 is the small French four-engine turboprop designed for the short-range airline and business aircraft markets. Turbo-Flight is the U.S. company which has been formed in Chicago to distribute the aircraft in North America.

Payton bases his liberal forecast primarily on the Potez 840's low costs. Its sale price is in the area of $500,000. A 16-passenger executive version, including Collins Radio, Lear autopilot and the interior, is priced at $460,000 plus 12½% duty and delivery charges. A 24-passenger high-density configuration for the local airline market costs only slightly more.

The engine, Turbomeca's Astazou II, for which Continental Aviation & Engineering Corp. is the U.S. licensee, is priced at $15,000 with the propeller adding $5000 more. Engine overhaul life starts at 1250 hours and Payton reports estimated engine overhaul cost at $3000 each.

Fuel consumption of 115 gallons per hour for all four engines at maximum cruise contributes to the operating economies of the French turboprop which Payton describes as providing four-engine safety with twin-engine economy. The Astazou engine currently is rated at 523 hp, but it is programmed for an ultimate 800 hp. The airplane is pressurized to provide an 8000-foot cabin at a flight altitude of 20,000 feet.

The Potez 840 prototype has been flying in France since last April and has now logged more than 75 flights. The second airplane, which will become the demonstrator, is about ready to fly and following French certification will be flown to the U.S. to be shown to local airlines in this country and Canada.

One of the more interesting innovations to be introduced by the French turboprop is a cabin interior arrangement in which the seats face the aisle rather than facing conventionally forward. In the airline version, there are 12 seats, made by SIPA, on each side of the aisle.

Deliveries for the North American market will be available in the third quarter of 1963. ■

Specs on the Potez 840

Specifications:

Wing Area	377 sq. ft.
Span	63 ft. 8 in.
Length	51 ft. 10 in.
Height	17 ft. 8 in.
Cabin length	35 ft.
Cabin head room	5 ft. 11 in.

Weights:

Basic weight with equipment	10,916 lbs.
Crew (2)	340 lbs.
Useful load	7,444 lbs.
Gross weight	18,700 lbs.
Wing loading	50 psf.
Power loading	9 lb/hp

Performance:

Range with fuel reserves (2000 st. mi. with fuselage tanks)	650 st. mi.
Maximum speed at 20,000 ft.	337 mph.
Cruising speed at 20,000 ft.	325 mph.
Rate of climb S.L.	2,180 fpm
Rate of climb 1 engine out of S.L.	1,315 fpm
Ceiling	36,700 ft.
Ceiling 1 engine out	28,500 ft.

Gross Weight Take-Off:

Length	2,340 ft.
Distance to clear 35 ft.	2,560 ft.
Runway length SR422B	3,280 ft.

Landing:

10 passengers and 590 gal. fuel	16,950 lb.
Landing distance from 50 ft.	2,230 ft.

Turbomeca Astazou II Engine

Description:

Compressor:	Single-stage axial plus single-stage centrifugal
Combustor:	Single annular
Turbine:	Three-stage axial
Output shaft:	Spline drive. 2426 rpm standard with alternate speeds of 1706, 2058, 2178 and 5922 rpm also available.

Ratings:

Takeoff HP	523
Continuous HP	473
Takeoff thrust	80 lbs.
Continuous thrust	73 lbs.
SFC (at takeoff rating)	0.66
Weight	290 lbs.

Airport Ads Can Be Attractive . . . And Profitable

By LEIGH FISHER

Airport terminal advertising is a new media which has evolved during the post-war years and now competes with radio and TV.

Display methods at airports have progressed from bulletin boards to the built-in wall display cases which were first developed in the 1949 South Bend (Indiana) terminal. Much more sophisticated display islands, dioramas, and exhibits now are in use. In 1949, South Bend was a relatively low volume airport, but even then these display cases were worth more than $7500 a year to the airport.

Concurrently, in the New York area, at Washington, and at some other high volume airports, a few free-standing or wall-mounted displays were being tested. Revenues were high, passenger comments and advertisers' responses were excellent. These early displays fixed the pattern for advertising in today's terminals.

So began a new field, for many years considered by the airport industry as yet another of the growing list of airport concessions. Most airport managements considered advertising as just another privilege to be bid or negotiated.

Not a true concession

But, in the 1950s, as airports developed their own pattern of terminal concession and property management, many airport managements came to realize that the so-called "advertising concession" really didn't have all of the elements of a true concession. Rather, a series of interests was involved:

- The airport management which had to approve each display for location, content and appearance (therefore effectively controlling the value of the privilege);
- The terminal architect who injected himself into the question of esthetics (but who frequently got too far into management's area by condemning most advertising displays as being in conflict with his "architectural design concept" for the building);
- The advertising agent/concessionaire who many times was over zealous in proposing as a display area the use of every available space in the building. Signs, displays and symbols often confused passengers and tended to offset any architectural values of the terminal. (Herein are the roots of the "feud" sometimes observed between airport and airport architects.)

At each airport there appeared to be an underlying demand for purely local displays, where manufacturers, wholesalers, retailers, civic interests, hotels-motels, banks and other local community-oriented advertisers could reach the airport market. This was the pattern at medium-sized airports where wall-display cases frequently were used.

The local market generated annual revenues of $5000 to $10,000 at the airport when airport managements acted as the renting agent. The interest of national advertisers in these airports was slow in developing. The following factors were involved:

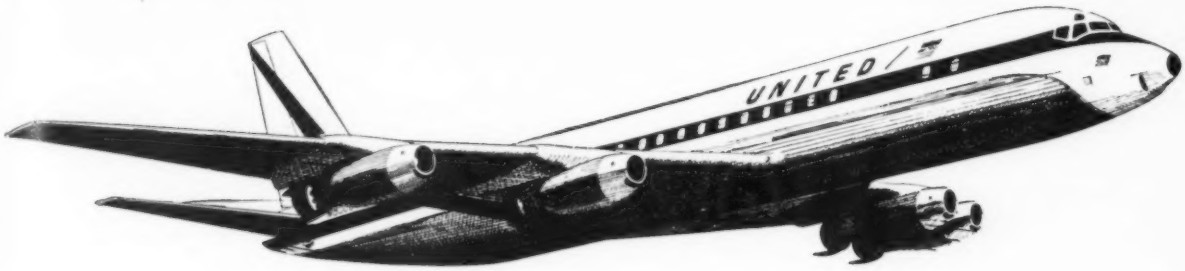
- The volume and character of the passenger/public traffic and the cities served;
- The imagination and ability of the advertising agent/concessionaire selling the display;
- The cooperation of the airport management and terminal architect in experimenting with new approaches to airport advertising.

Now national and local

In the mid-1950s, sparked by hotel-motel-inn competition, local interest began to rise, and now airport advertising has become accepted by both national and local advertisers as a specialized activity. Its current importance warrants close study by airport

Continued on page 42

IMAGINATION HAS SPARKED display concepts such as this St. Louis Lambert Field information booth (not sales office). (A Hart Advertising Co. display)



FOR JET-AGE TEAMWORK... DEPEND ON UNITED

Teamwork calls for everybody working together with one common purpose: to do the very best job for all concerned.

This kind of team play is a United Air Lines specialty. And it winds up with more satisfied customers and fewer problems for you.

The world's largest jet fleet plus United's vast route system means teamwork in one-airline convenience for bookings. United shares cities with all local service carriers. This makes it easy for you and United to confirm reservations readily.

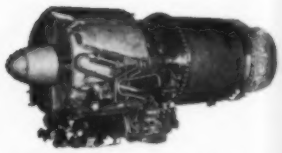
More important, United treats your passengers the way you treat them... with Extra Care in every detail.

Next time you need interline teamwork put United in the lineup. We'll do the same, first chance we get.

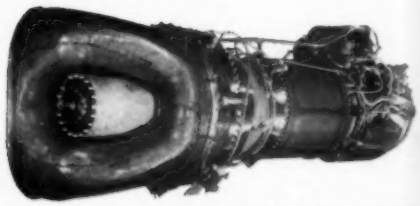
WORLD'S LARGEST JET FLEET / THE EXTRA CARE AIRLINE

UNITED

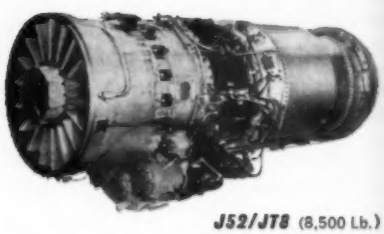
PT6 (500 Shaft HP)



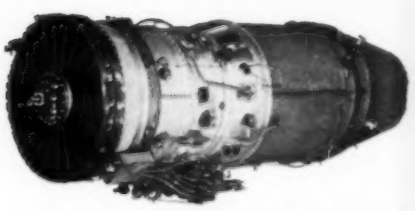
J60/JT12 SERIES (3,000-3,300 Lb.)



JFTD-12 (4,050 Shaft HP)

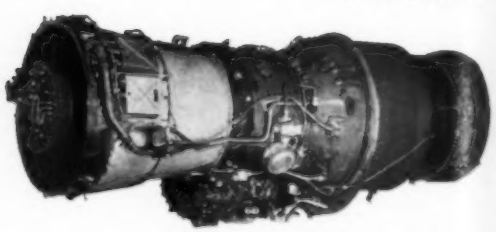


J52/JT8 (8,500 Lb.)

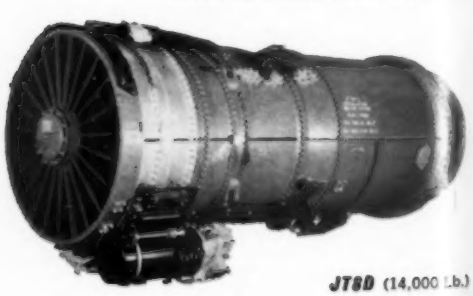


JTF10 (10,000 Lb.)

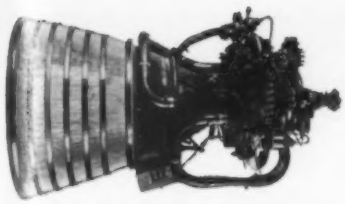
Power



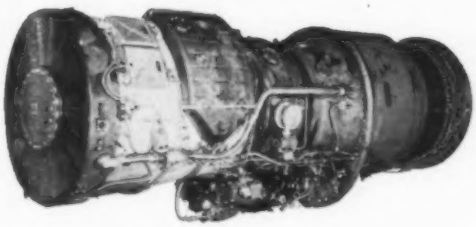
J57/JT3C SERIES (12,000-13,500 Lb.)



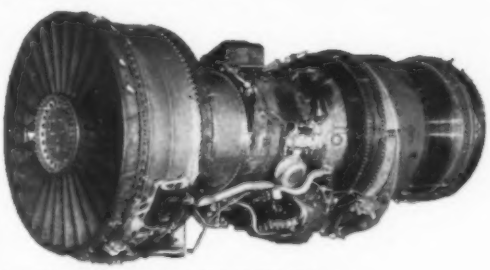
JT8D (14,000 Lb.)



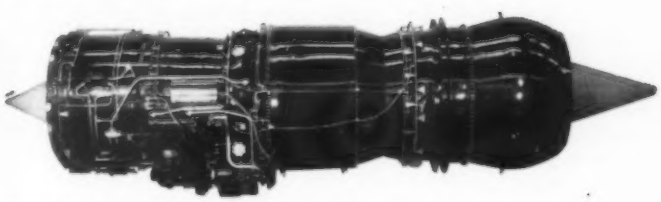
LIQUID HYDROGEN ROCKET ENGINE LR-115 (15,000 Lb.)



J75/JT4A (16,800-17,500 Lb.)



TF33/JT3D SERIES (17,000-18,000 Lb.)



J58/JT11 (30,000 Lb. class)

that spans the field of flight

Above the seven seas and across six continents, Pratt & Whitney Aircraft jet engines have carried more passengers to more places than all others in the world. They power 8 out of 10 long-range Douglas DC-8 and Boeing 707 jetliners — and all the medium-range Boeing 727s on order. They power the majority of our nation's frontline military jet aircraft. These jet engines have proved their dependability and economy in more than 15,000,000 hours of flight. The Pratt & Whitney Aircraft family of engines offers the broadest range of aircraft power available from any single source in the world. Liquid hydrogen rocket engines designed and built by Pratt & Whitney Aircraft will probe deep into space.

Pratt & Whitney Aircraft DIVISION OF UNITED AIRCRAFT CORPORATION / EAST HARTFORD, CONNECTICUT

UA

Continued from page 38

managements, as revenues at many of the medium-to-large airports range upwards of $30,000.

The post-war years have shown that there are three different methods of handling airport advertising:

- Direct leasing to displayers and advertisers *by airport management* (most applicable in the local market and at smaller airports);
- Bid the privilege as a *concession.* Because of the changing nature of advertising, and the approvals required from airport management and architects, these privileges are not a true "concession." Bidding also tends to emphasize the revenue return almost to the exclusion of esthetic qualities;
- Select an airport *advertising agent* on the basis of experience, ability and understanding of *each* airport's advertising goals and esthetic requirements. Currently this method would seem to provide the most flexible, compatible, and productive answer.

The changing pattern of the airport advertising agent from a concessionaire to one who provides a service to airport management was well illustrated recently by a terminal architect who said. "Arrangements for display and advertising should differ from other concessions such as food service, garage and parking lot, bag lockers, etc., in which the concessionaire receives certain privileges subject to policing by the airport management, and revenue is a dominant factor.

Specialized and creative

"In the case of displays and advertising, a specialized creative service is needed, professional in nature, in which the contributing parties can work together with mutual understanding toward optimum development of the potential under the specified objectives."

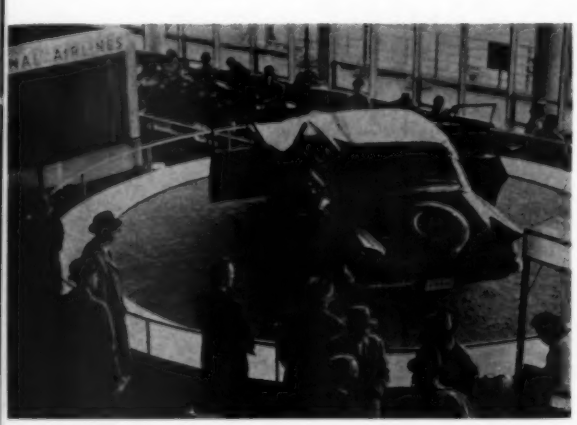
While this achitect sought creative service, others seek a sympathetic approach to an advertising concept which will not injure the architectural character of their terminal design. Most would agree with advertising specialist John T. Hart of Hart Advertising Company, St. Louis, who says: "The basic philosophy behind our (airport) display operations is that all displays should first be interesting and informative to the traveling public and they must be in keeping with the architecture of the terminal. If they do not do this, we do not feel that they belong."

BUILT-IN WALL DISPLAYS, first developed in South Bend, Ind. terminal in 1947-49 were then ahead of their time. Free-standing cases followed 10 years later.

One of the best summaries of the new concept of an airport advertising agent and the creative service he furnishes was outlined by F. L. Page, President, Transportation Displays, Inc., New York, to the May conference of the Airport Operators Council in Miami. He used the term "advertising agent" as he said: ". . . to emphasize the function of this service as an agent of the airport management, as distinguished from 'advertising agency,' or display manufacturer whose primary function is to serve the interest of the advertiser.

". . . the functions of such an airport advertising agent are somewhat different from the usual concessionaire to whom the airport management assigns the right to operate his own individual business. The duties of an airport advertising agent should include his analysis of the advertising potential of an airport, careful study of logical positions for various types of advertising units and the calculation of appropriate rates."

"Creative service" well defines the role of the airport advertising agent, a new specialist in the airport industry.

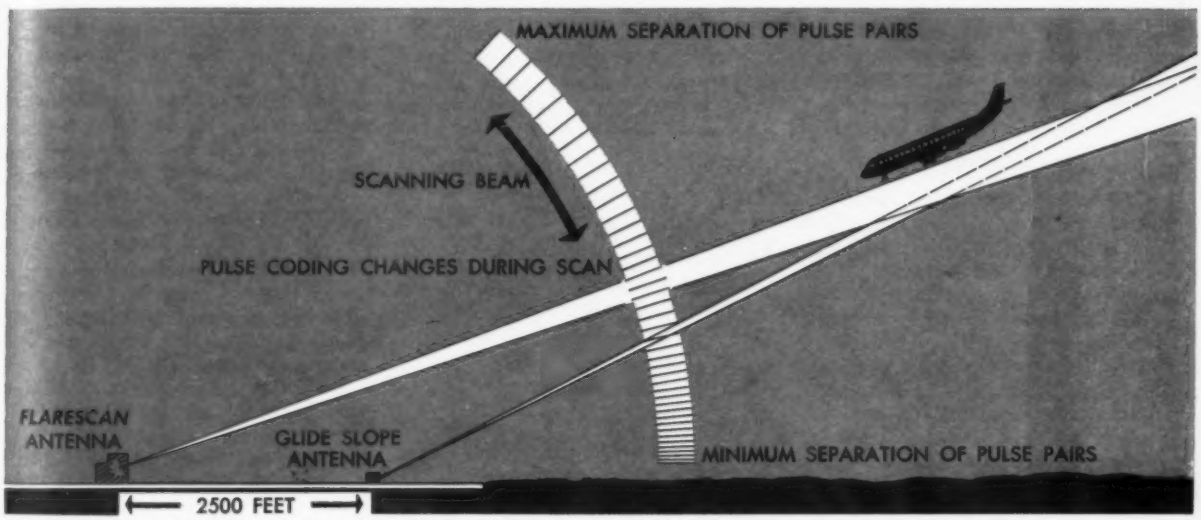


LIVE DISPLAYS such as car (left) at Washington National gained rapid acceptance, but terminals having only pedestrian access doors can't accommodate them. Sign at right is ingenious approach of Dyer Sign Co., Lansing, Mich.

Next month: *In conclusion of this two-part report, Leigh Fisher will discuss the goals and ground rules of airport advertising; bidding versus selection of an agent; the role of the agent; terms, rates and responsibilities in airport advertising; plus photos of recent pace-setting airport displays.*

AIL's 'Flarescan' Offers ILS Guidance to Touchdown

By PHIL GERACI



FLARESCAN TRANSMITS coded beam which scans vertically establishing "family of angles" with glideslope path.

The search for an all-weather instrument landing system to help combat the airlines' annual $60 million weather penalty has largely narrowed to a question of philosophy with the battle lines being drawn by proponents of the radio altimeter, on the one hand, and "slant-angle" measuring devices such as Airborne Instrument Labs' "Flarescan", on the other.

Such is the view of FAA's A.B. "Al" Winick, prime "coordinator" in the political/engineering hassle over "system concepts" and the man who is in the middle of the all-weather picture in more ways than one. Winick is chief of the Navigation Branch of FAA's Aviation Research and Development Service, and it is he who has maintained the Agency's closest coordination with manufacturers and operators.

In the search for reliable, feasible and economical equipment to provide "down to the runway" guidance in otherwise impenetrable weather, a number of proposed systems have all been fallen by the wayside (AIRLIFT, FAA). In their place have come new concepts, of which Flarescan, developed by the Airborne Instruments Laboratory Div. (AIL) of Cutler-Hammer, Inc., is a strong contender.

Flarescan (see cover) is aimed directly at what its backers claim is one of the main disadvantages of the radio altimeter system, now chiefly characterized by the British BLEU (Blind Landing Experimental Unit)—lack of positive guidance control during flare-out. Flarescan, in effect, takes over where the present ILS ends, at the roughly 100-ft. mark where a pilot must cut his rate of descent from the 10 ft. per second of the glideslope path to a more shallow 2 ft. per second just prior to touchdown. It is the electronic guidance provided by Flarescan during the flare maneuver, usually begun at about 100 ft., through to touchdown that has provided AIL with a name for its system.

Transmits coded beam

Like REGAL, a Gilfillan Brothers system also under evaluation by FAA, Flarescan transmits a coded beam of microwave energy from the ground. But whereas REGAL also requires an airborne interrogator to query the ground (much like DME) for distance data, Flarescan uses an airborne decoder to compare the Flarescan beam with the existing glide slope. The resulting angular information may be fed to the ILS presentation which displays glide slope data to the point where the beams intersect, and Flarescan guidance from that point to touchdown.

Flarescan signals are transmitted from a "nodding" antenna, postitioned 2500 ft. down the runway from the glide slope antenna. The Flarescan antenna scans through an active sector of 20 degrees, transmitting pulses of progressively varying spacing.

The pulse spacing is proportional to transmission angle. Thus, at any position on the sweep, pulse spacing can be used to determine elevation angle. Both altitude and distance from touchdown can be determined when Flarescan angle is compared with the glide slope signal.

Flarescan operates at 16,000 mc.

ENGINEERS check Flarescan antenna, now undergoing structural redesign.

The antenna produces a fan-shaped horizontal beam with a vertical thickness of ½ deg. The transmission is effective out to 20 miles, permitting the pilot to check both his ILS and Flarescan receivers (by comparing one with the other) well in advance of the point at which he is committed.

Accuracy of pulse spacing in the ground transmitter is controlled by a crystal oscillator to within 0.01 deg. The highest pulse-repetition frequencies (corresponding to the closest pulse-spacing) occur at the lowest elevation angles, providing an increase in measurement precision as the aircraft approaches the touchdown point.

Average measurement

Beam scan rate is eight to ten times per second. Angle measurement is based on an average of the 16 to 100 pulses received each time the beam passes, thus minimizing chance of error from extraneous pulses due to noise and interference.

Cockpit instrumentation still is subject to experimentation. "We are not in the cockpit instrument business but we are in the ILS and flare guidance business" is the way AIL's Aviation System Research Head George Litchford explains it. At the moment, output from the decoder is being coupled to the conventional cross-pointer ILS display in the Grumman Gulfstream AIL has been using since Oct. 1 for test purposes. Previous tests were made with a B-25.

Additional data—distance from touchdown, altitude, etc.—which can be derived from the Flarescan transmission also may be presented to the pilot if it can be done in a simple form not requiring mental gymnastics at that critical point of landing.

AIL has been working on systems for all-weather landing for more than a decade. Litchford was closely associated with the Curtis Committee and has been involved in all-weather landing research ever since. At the moment his total energy is being thrown into the Flarescan program, not only at Peconic Field, L.I. where demonstration/test flights are flown an average of twice a week, but at aviation electronic gatherings such as the Radio Technical Commission for Aeronautics which opened its annual meeting in Washington last month with an All-Weather Landing Symposium at which Flarescan was described.

Litchford points out that Flarescan's chief "political" advantages are the following:

- Unlike a radio altimeter system, Flarescan is totally independent of the terrain directly preceding the runway;
- Flarescan provides guidance all the way down to the runway, and presents no "transition gap" in data during the final moments before touchdown;
- Flarescan will permit complete manual landings as well as automatic.

Cost of an airborne installation could be in the neighborhood of $8000, roughly the same as airborne DME. If the system is accepted, the airline volume required will lower the price even more.

KEY FIGURES in all-weather program: AIL's George Litchford (left) and FAA's Navigation Branch Chief Al Winick.

$100,000 per runway

Cost of a ground installation would be roughly $100,000 per runway. The microwave radio transmission equipment requires no ground preparation, and can be installed wherever convenient. The flare-out angular scanner may be installed on either side of the runway and with no special clearance requirements.

The experimental receiver-decoder built by AIL, originally designed around vacuum tubes but now being transistorized, consists of a superhetrodyne receiver, linear-sawtooth decoder, center-of-gravity angle-tracking circuits and automatic calibration control. In addition to the receiver-decoder, airborne equipment includes a microwave antenna and cockpit indicator.

In July, AIL delivered to FAA a report covering static measurements of the transmission system. Now AIL has another FAA contract for three Flarescan receivers for evaluation. An AIL ground installation will be "loaned" to FAA for further tests of the system at Atlantic City, under a separate contract to provide "engineering assistance." But Litchford emphasizes that AIL's own flight test program at Peconic Field has amassed a wealth of test data already, and this data will be turned over to FAA and the airlines for analysis.

AIL has a separate FAA contract for a waveguide glide slope, designed to narrow the beam and reduce "bends" due to ground reflections. Litchford points out that a more accurate glide slope transmission, in addition to providing a major improvement for the present ILS, also improves the accuracy of information that can be derived from the Flarescan/glide slope comparison.

The ground antenna being used for present flight tests is currently being redesigned to incorporate a "torsion-bar" drive that will have "virtually indefinite" life as no bearings or other members are under high stress, according to Litchford. Scan rate is variable, but recent tests have been operated at eight to ten sweeps per second.

Operational training for Flarescan would be relatively simple, Litchford says. "Any pilot who can fly a flight director could fly Flarescan with little extra training." He feels that the training required would be less than that needed for an all-weather system based on a radio altimeter because altimeters require automatic landing control and because the pilot is not in the control loop during this critical maneuver yet must be brought back in for roll-out.

Although Winick will concede that Flarescan appears to be less complex, technically, then REGAL, he is reserving further judgment on the relative merits of REGAL, Flarescan or the radio altimeter until additional test data has been compiled. He was due for more Flarescan flight tests the latter part of last month.

Winick lamented the lack of test aircraft—particularly jets—at NAFEC, but expressed hope that a Boeing test program with the prototype 727 would serve to fill some of the gaps. ■

Altitude Reporting Urged In ATA Task Group Report

A nine-point statement of views on the needed characteristics of automatic altitude reporting on the ATC radar beacon system was released in November by the Air Transport Assn., the report of an ATA task group organized to coordinate industry opinion.

ATA offered to match in airborne equipment FAA's time scale for implementation of ground equipment. The statement of views urged FAA to undertake final evaluation, standardization and implementation of altitude reporting as soon as possible.

Here are the details of the ATA program:

1 The airlines view automatic altitude reporting on the ATC Radar Beacon System as a data acquisition system which has the capability of providing reliable and accurate aircraft altitude information to the air traffic controller. In order to preserve the quality and integrity of the information to be transmitted there should be no pilot manipulation or other manual intervention into the transmission process.

2 The information source for the automatic altitude report must be the best altitude information available in the aircraft. The best altitude information available in the aircraft must also be made available to the pilot operating the aircraft.

3 The automatic altitude reporting system must provide the capability for altitude reports from aircraft operating at all altitudes/flight levels in which the Air Traffic Control system provides service.

4 The automatic altitude reporting system should provide for altitude increments of 100 ft. This altitude increment (or gain size) is of special importance in terminal area operations where airspace is at a premium, where altitude assignments are regularly made at 100 ft. levels, and where indications of aircraft climb and descent are of particular significance.

The encoding system should provide for the 100 ft. increment structure as well as a simplified encoding structure based on 500 ft. increments for use where such coarser increments can be operationally accommodated.

5 The airlines have a strong interest in the implementation of ATC transponders with automatic altitude reporting in all aircraft which participate in the ATC system as well as those aircraft of which the Air Traffic Control system must have knowledge in order to more efficiently perform its functions. The airlines support the development and implementation of simplified airborne equipment. However, the airlines urge extreme caution in the implementation of a mixed environment in which some aircraft report in coarse (500′) altitude increments and others in fine (100′) increments. Particularly in terminal areas, there is a possibility that this mixing could cause extravagant use of precious airspace.

6 Altitude information presented to controllers should be the same as that being used for operational purposes in the cockpit. In order to accomplish this, translation/conversion equipment is required on the ground when other than standard settings are used.

7 All automatically reported altitudes should be based upon a standard pressure setting (29.92) regardless of the pressure settings being used in actual operations by pilots and controllers. However, the use of an automatic altitude transmission system based on standard settings shall not force the operational use of standard settings.

In order to use automatically transmitted reports in standard settings in airspace where corrected settings are used operationally, the reports should be "translated" prior to presentation to controllers in order to meet the conditions of 6 above.

FAA should proceed with high priority development of appropriate ground translation/conversion equipment to provide controllers with the same information being used operationally in the cockpit.

Pending development of ground translator/conversion equipment, automatic altitude reports predicted on standard settings will be usable by ATC radar controllers to ascertain relative vertical spacing of equipped aircraft regardless of the pressure settings being used in actual operations.

8 Cockpit monitoring of the information which is automatically transmitted to ground facilities is not required and should be left to the option of the user.

9 The airlines believe that optimum use of automatically transmitted altitude information can be made only when altitude information is available to the controller directly on his radar display. While this type of display is a realistic goal, the airlines believe that FAA, in the interim, should take maximum advantage of automatic altitude reporting by implementing digital read-out systems which provide a separate, manually activated, display to the controller. Neither the development nor the implementation of such interim equipment should be permitted to delay the attainment of direct read-out on the controller's display. ■

Checking the Circuit

• **Overheard** at RTCA's All-Weather Operations Symposium: British BLEU (Blind Landing Experimental Unit), despite extensive record of perfect landings, is still meeting strong objections to its leader-cable requirement.

• **Electrical "sticks"** are being pushed by some engineers who feel that manual control systems ultimately must disappear. But where to put them in the cockpit is a problem. Technically, they can be placed anywhere, but long years of experience have accustomed pilots to the traditional center position.

• **Honeywell crash** and maintenance recorders have proved to be "too sophisticated and too expensive" for most airlines, and sales have trickled. Honeywell designers are surveying the problem.

• **Noise abatement** procedures at some airports are causing difficulties in ILS approaches. Glide slope system was designed before jets to be entered from below. Now jets are being forced to enter from above, because of bans on low-altitude operations in some localities, and entirely new techniques are required.

• **What to do** with the pilot's left hand on controlled approaches is puzzling equipment designers. Autopilot controls traditionally are located in the center of the cockpit, between pilot and co-pilot. This keeps the pilot's right hand busy while his left hand is ignored.

• **Ryan has abandoned** work on its "state-of-the-art" radar altimeter (of which, to quote a Ryan engineer, there are now "sixteen models on the market") in order to pursue a "new approach" to low-level accuracy.

• **Motorola's ACCESS** proposal for a combined pulse/voice air traffic control system still is "in committee" at FAA.

• **Psychological resistance** to dependence on "not 100% reliable" electronics still is felt to be the greatest drawback to fully automatic landings in poor weather. Although pilots accept the results of tests "performed in clear weather at Miami" they question the safety of a hands-off approach under marginal conditions.

• **British aviation officials** in the U.S. jokingly allude to a certain degree of "FAA brainwashing" on matters of electronic systems standards.

• **All-weather symposiums** have "served their purpose" in the opinion of many attending RTCA's recent Washington meeting which saw the "same old problems rehashed with familiar insistence on the same old goals" by airlines, government and manufacturing representatives. Many attendees feel it is time to "get on with the testing" to provide industry with reliable statistics and workng hardware for practical evaluation.

• **American Airlines'** experience with ITT DME on jets underlines a new problem which may cause ATC confusion until the time that all controlled aircraft are DME-equipped. American pilots, reporting "miles to go" to the center, often are asked by ground controllers to "say again" but this time in terms of airway coordinates so the controllers can find them on their airway charts.

U.S. Airline Traffic—Jan./Sept. 1961 vs. 1960

This complete summary compiled by AIRLIFT Magazine from official CAB data

	1961 to Date				Month of September					
	Rev. Pass. Miles (000)		Rev. Pass. (000)		Rev. Pass. Miles (000)			Rev. Pass. (000)		
	1961	% Change	1961	% Change	1961	1960	% Change	1961	1960	% Change
DOMESTIC										
United [2]	5,739,374	11.3	8,745	4.2	650,475	641,790	1.4	966	1,027	— 5.9
American	4,434,807	— 7.9	5,607	— 9.9	533,365	563,371	— 5.3	662	710	— 6.8
Trans World	3,218,755	— 7.5	3,492	— 8.3	398,420	411,244	— 3.1	413	438	— 5.7
Eastern	2,994,879	— 3.6	5,738	— 1.8	295,956	317,113	— 6.7	616	662	— 7.5
Delta	1,627,881	18.8	2,738	9.4	167,108	144,403	15.7	282	277	1.8
National	817,153	0.1	1,212	— 3.5	91,765	68,825	33.3	133	125	6.4
Braniff	786,377	— 2.4	1,666	— 1.4	90,034	92,495	— 2.7	186	189	— 1.6
Northwest	737,006	—31.4	1,013	—29.9	109,512	121,792	—10.1	151	168	—10.1
Continental	677,377	— 1.2	1,002	— 1.5	73,937	77,029	— 4.0	109	117	— 6.8
Western	616,745	16.7	1,030	—20.3	86,839	79,129	9.7	147	136	8.1
Northeast [1]	586,648	32.9	1,165	6.4	51,156	40,501	26.3	N.A.	....	...
	22,237,002	— 1.1	33,408	— 3.4	2,548,567	2,557,692	— 0.3	3,665	3,849	— 0.5
INTERNATIONAL										
PAA System	4,664,495	19.8	2,662	9.0	635,459	503,363	26.2	342	302	13.2
Latin America	1,198,555	7.0	925	— 0.2	150,262	112,440	33.6	110	91	20.9
Atlantic	1,931,014	20.6	1,309	14.6	293,162	228,440	28.3	181	163	11.0
Pacific	1,481,009	32.8	378	18.9	185,993	155,706	19.4	45	42	7.1
Alaska	53,917	— 3.5	50	— 7.4	6,042	6,777	—10.8	6	6	...
Trans World	731,307	—19.3	234	—21.2	108,924	123,774	—12.0	34	39	—12.8
Eastern Overseas	597,566	9.2	400	6.7	55,154	58,446	— 5.6	38	40	— 5.0
San Juan	463,431	— 0.4	305	0.1	40,427	48,899	—17.3	27	32	—15.6
Bermuda	26,754	— 4.9	32	—11.1	3,302	3,293	0.3	4	4	...
Mexico	107,381	98.8	63	75.0	11,425	6,254	82.7	7	4	75.0
United	361,574	15.1	145	16.0	41,643	43,298	— 3.8	17	17	...
Northwest	284,185	2.6	147	...	40,958	133,909	20.8	21	18	16.7
Panagra	165,618	14.7	93	...	20,122	16,732	20.3	11	10	10.0
Trans Caribbean	141,586	—16.3	92	—16.4	10,504	19,844	—47.1	7	13	—46.2
Braniff	124,753	30.5	84	78.7	27,474	11,393	141.1	18	6	200.0
American	69,693	—24.1	65	—26.1	7,923	8,387	— 5.5	8	8	...
Western	56,100	—10.0	37	—11.9	8,799	5,533	59.0	6	4	50.0
Caribair	23,264	10.2	330	9.6	2,280	1,877	21.5	33	27	22.2
Mackey	17,611	—15.6	101	— 1.0	1,207	1,351	—10.7	7	6	16.7
Delta	17,491	—45.1	13	—43.5	1,788	2,850	—37.3	2	2	...
National	1,547	—92.1	4	—84.0	50	2,140	—97.7	1	3	—66.7
	7,256,790	10.0	4,407	4.5	962,285	832,897	15.5	545	495	9.9
LOCAL SERVICE										
North Central	144,746	10.5	776	5.4	16,382	15,781	3.7	86	88	— 2.3
Allegheny	127,667	34.3	614	25.3	15,342	13,663	12.3	74	67	10.4
Mohawk	113,150	31.8	546	27.9	15,541	11,307	37.4	75	56	33.9
Pacific	79,844	— 9.0	342	—10.7	8,349	10,099	—17.3	36	45	—20.0
Piedmont	78,328	6.7	367	7.6	9,429	8,838	6.7	44	42	4.8
Ozark	75,889	1.7	424	0.5	8,622	9,435	— 8.6	48	54	—11.1
Frontier	73,934	9.3	271	6.3	8,130	8,127	...	30	30	...
West Coast	71,391	— 1.1	288	— 4.9	8,092	8,342	— 3.0	33	34	— 2.9
Bonanza	58,356	18.5	232	17.2	6,540	5,296	23.5	26	22	18.2
Trans Texas	54,835	0.3	236	0.9	6,106	6,458	— 5.5	26	27	— 3.7
Southern	52,482	65.7	290	64.8	6,165	3,765	63.7	34	21	61.9
Lake Central	47,052	70.2	294	68.0	6,133	3,338	83.7	38	21	80.9
Central	32,800	32.0	171	32.6	4,333	2,901	49.4	23	15	53.3
	1,010,474	15.4	4,851	13.6	119,164	107,350	11.0	573	522	9.8
HELICOPTER										
Chicago	3,272	—18.4	191	—19.7	372	485	—23.3	21	29	—27.6
New York	2,196	— 1.9	112	0.9	250	259	— 3.5	14	12	16.7
Los Angeles	1,242	13.0	35	16.7	110	116	— 5.2	3	3	...
	6,710	— 8.7	338	—10.8	732	860	—14.9	38	44	—13.6
INTRA HAWAII										
Hawaiian	58,010	—33.8	376	— 7.6	6,029	9,216	—34.6	42	44	— 4.8
Aloha	42,092	— 2.2	280	— 1.4	4,409	4,435	— 0.6	29	31	— 6.5
	100,102	—23.4	656	— 5.1	10,438	13,651	—23.5	71	75	— 5.6
ALASKA										
Pacific Northern	99,868	10.6	104	10.6	11,633	11,147	4.4	12	12	...
Alaska	64,476	—21.7	70	—27.1	5,760	10,146	—43.2	7	12	—41.7
Wien	12,106	5.8	38	2.7	1,348	1,205	11.9	4	4	...
Reeve	11,688	— 0.6	13	— 7.1	1,250	1,420	—12.0	1	2	—50.0
Northern Consolidated	8,428	9.8	26	8.3	888	792	12.1	3	2	50.0
Alaska Coastal	4,741	— 3.7	49	...	565	623	— 9.3	6	6	...
Cordova	3,171	12.2	20	33.3	423	304	39.1	3	2	50.0
Ellis	2,846	— 6.6	45	—10.0	362	380	— 4.9	6	6	...
	207,324	— 3.3	365	— 4.0	22,229	26,017	—14.6	42	46	— 8.7

	SEPTEMBER FREIGHT			TOTAL SCHEDULED			TOTAL ALL SERVICES		
	1961	1960	% Change	1961	1960	% Change	1961	1960	% Change
ALL CARGO (Ton-miles)									
Aaxico	.....	.....	...	.....	.....	...	4,842,295	.....	...
Aerovias Sud	124,479	261,542	—52.4	124,479	261,542	—52.4	248,946	362,694	—31.4
Flying Tiger	5,707,926	6,692,142	—14.7	5,743,129	6,787,165	—15.4	15,998,613	9,595,795	66.7
Riddle	1,183,728	1,464,144	—19.2	1,249,369	1,519,756	—17.8	12,864,665	3,440,391	273.9
Seaboard World	3,163,333	1,976,704	60.0	3,971,270	2,955,386	34.4	8,382,209	5,154,298	62.6
Slick	.....	.....	...	.....	.....	...	6,656,218	3,907,804	70.3
	10,179,466	10,394,532	— 2.1	11,088,247	11,523,849	— 3.8	48,992,946	22,460,982	118.1

[1] Northeast's passenger miles are estimates submitted to CAB.—Passenger figures not available year to date reflects Jan.-August for passengers.
[2] United statistics for 1960 include those of Capital for comparative purposes. 1960 Capital figures Jan.-September are 1,154,283,000 pass.-miles, 2,153,000 passengers, September 125,788,000 pass.-miles, 310,000 passengers.

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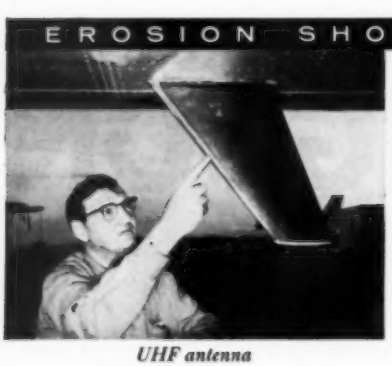

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Don't Lower Those Jet Minimums

By CAPT. E. J. BECHTOLD

The majority of U.S. airline pilots flying jet equipment have echoed a resounding "No" to the proposal for lowering jet minimums from 300¾ to 200½ at the present time.

FAA, while courteously attentive, has chosen to approve this reduction in minimums over the official objection of these airline pilots. The agency maintains that the restrictive measures contained in its "criteria for approval" make this reduction feasible. And there the battle lines are drawn.

Line pilots are not happy with the following:

- Runway length requirements;
- Adequacy of instrument failure warning systems;
- Weather measuring devices and reporting criteria;
- Performance accountability on wet surfaces—rain, slush, snow;
- Lack of an informative landing aid indicating runway distance remaining after touchdown;
- Designated cross-wind component of 15 knots;

Historically, line pilots have been shooting for lower minimums—consistent with the equipment being flown and the facilities, ground and airborne, made available. Unquestionably, there are those who would go for the lowered minimums now proposed and approved by FAA. But it should be significant to both the carriers and FAA when a *majority* of these people voice their objection.

There is another objection, apparently little understood by either FAA or the public (the carriers are well aware of this) which is the "built-in" pressure on pilots to comply with whatever "legal" authorizations are granted in the operating specifications. We couldn't, and wouldn't, consider an approach that wasn't legalized—as only the regulatory agency can phrase it.

While the requirements for lower minimums for jets may appear adequate to some airlines and FAA, they do not impress pilots who will be expected to conform to these minimums under actual weather conditions, which more often than not are worse than reported.

Surprising as it may appear to some, getting to 200 ft. is not the big problem. The problem is getting from 200 ft. to the deck without incident. The safety margins given credence in piston equipment are sliced too thin for jets. As one pilot puts it: "This machine has the ballistics of a missile and is not as forgiving as most piston types."

Another pilot states: "unless you're 'in the slot' (perfectly aligned, at proper speed and glide angle), with all the other factors balanced in your favor, you're in bad shape to complete the approach successfully."

I would be glad to discuss with anyone the shortcomings of:

- Present ground equipment;
- Maintenance of airborne equipment;
- Airport runway and navaid layout;
- Weather reporting and forecasting;
- NOTAMs of inoperative components;
- Compromises to safety: anti-noise campaigns, real estate deals, runway surfacing, length, direction, etc.;
- Critical fuel problems, alternates;
- Dispatch and passenger service problems;
- Pilot fatigue problems, arrival times and crew scheduling problems (midnight departures, noon arrivals);
- Other compromises with safety: anti-noise preferential landing runways, wet runways, prohibited runways, political boondoggles, and associated problems at individual airports.

Runway 4R and 22L at Idlewild is the only runway I know of in the eastern half of the U.S. that comes close to meeting the criteria of an all-weather runway. But I have yet to see the sequence flashers in operation. Proponents of lower jet minimums should review the NOTAMs with regard to field conditions on this runway last winter.

Two or three times last winter I used all of the available runway trying to stop. On several occasions I have been held to the limit of fuel load endurance due to delays caused by lost aircraft, missed approaches, radar breakdown at critical times, etc.

I would like to point out to FAA that approach stacks for this runway are a 25-year-old range station at Mitchell Field and a low-power beacon (Lido), unreadable in precipitation, and to ask the Agency to review maintenance records of inoperative or erratic instruments, radio and autopilots.

We'd better face it now: the jets are at least five years ahead of the ground facilities. Let ground facilities catch up, then look at the problem again! ■

SILICONE NEWS from Dow Corning

Photo courtesy of Douglas Aircraft Company

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ABOUT PEOPLE

IN THE AIRLINES

Robert H. Trench Thompson, BOAC's manager in the U.S., is relinquishing his post to take an undisclosed appointment in the London headquarters. **Leslie G. S. Hyland,** sales manager, western routes, succeeds Thompson as acting manager, U.S.A.

Herbert N. Salyer, promoted to deputy general sales manager of the American Region of Japan Air Lines.

Oscar Oberon succeeds **Werner Seiler** as U.S. cargo traffic and sales mgr. in North America for Swissair.

Harry Kramer named cargo sales representative for KLM in New York. Kramer was formerly with Lufthansa.

Dr. J. E. Faraday appointed to new post of chief methods adviser of BOAC.

Morton S. Beyer becomes v.p. of Riddle Airlines in addition to his post as ass't to president **Robert M. Hewitt.**

Harold W. Barenz has been appointed director of operations planning for American Airlines.

E. M. Branand, a 16-year veteran with United, has been named manager of community relations in the Midwest.

Herman S. Stanley has been named supt. of passenger service at Delta Air Lines, succeeding the late **John L. Sutton.**

John W. Mifflin has been appointed mgr.-media advertising for Pan American.

Northeast Airlines has promoted **William E. Jenkins** to director of traffic services.

Jesse S. Miguel appointed ass't director of passenger service for Braniff.

BRANAND

BEYER

OTHERS IN AVIATION

William L. Morrisette, Jr. v.p.-sales and advertising, Eastern Air Lines, elected president of ATA's Air Traffic Conference; **C. Gordon Brown,** v.p.-traffic and sales, Piedmont, elected first v.p. and **T. M. Miller,** v.p.-traffic and sales, Delta, named second v.p.

Joseph D. Blatt has been named Director of FAA Aviation Research and Development Service. **Joseph H. Tippets,** head of aviation facilities activities since the birth of FAA, has been named asst. administrator, western region, in Los Angeles. **Donald S. King** has been designated acting director to replace Tippets. **Edward C. Marsh** becomes Tippets' deputy in Los Angeles.

Martin M. Decker, president of the Decker Corp. elected president of the National Aeronautic Assn.

W. Jerome Kane, mgr. of export sales, Boeing transport division, elected chairman of the AIA Export Committee.

Upper-Echelon Changes at National

WIELAND

BAKER

GRANT

COLTHAR

Quick on the heels of the election of **Robert E. Wieland** to succeed **G. T. Baker** as president of National Airlines (See p. 13), the new NAL head appointed two new vice presidents.

Robert S. Grant becomes v.p.-customer service and **John W. Colthar,** v.p.-schedules. Grant reports to W. F. Prigge, National's v.p.-traffic and sales, and takes over responsibility for all sales and service activities in Prigge's absence.

Both Grant and Colthar came to NAL from American—Grant in 1953 and Colthar in 1959.

AMONG THE SUPPLIERS

P. Mazer named chairman of board of Avions Max Holste.

J. Cahen-Savador elected board chairman of Nord Aviation.

New members of the board of Whitworth Gloster Aircraft are: **Sir Roy Dobson, Sir Thomas Sopwith, H. Burroughes** (chairman), **W. S. D. Lockwood** (managing director), **C. Bayly** (general manager), **T. J. Lidbury, S. D. Davies, F. Martin, E. D. Keen** (chief engineer-aero), **F. D. Stallabrass** (secretary), **E. W. Shambrook** (financial director), and **H. W. Sidwell.**

Alex Laurence, formerly secretary of Hawker Aircraft Ltd., appointed secretary of Hawker Siddeley Aviation. He succeeds **D. E. Haynes** who became secretary of Bristol Siddeley Engines.

Albert H. Ballew named eastern regional sales manager for RCA Aviation Equipment.

Board of directors of Weber Aircraft Corp. elected **Arnold Johnson** president, succeeding **Karl Weber** who remains chairman.

E. A. "Earl" Bostelmann joins the commercial sales dept. of American Airmotive Corp. as sales and service engineer, heading Avionics sales.

Frank M. Sylvester appointed ass't to the president, Hagan Industries, Inc.

David W. Horst appointed eastern sales manager, Aircraft Division, Aeroquip Corp.

Harry E. Matych appointed pubrel and adv. director for All American Engineering Co.

L. F. E. Coombs joins technical sales dept. of Smiths Aviation Div. He was technical secretary of the British Air Lines Pilots' Assn.

Carey A. Evans named v.p.-engineering for Liquidometer Corp.

Harold L. Flowers named Avco gen. mgr. of engineering, Electronics & Ordnance Div.

Edward L. Asch appointed operations mgr. in the International Division of Vickers, Inc., Div. of Sperry Rand Corp. Replacing Asch as dir. of sales training is **Dane E. Smith.**

OBITUARIES

Eugene Jacques Bullard, 67, first Negro military pilot, veteran of two World Wars, recipient of the Croix de Guerre, the French Military Medal and more recently honored as a chevalier of the French Legion of Honor, died in New York on October 13.

Harry Woodhead, 72, Convair president 1943-48, former chairman of Vultee Aircraft and v.p.-general manager of Douglas-Tulsa died in La Jolla, Calif. early in November.

E. G. "Guffy" Erikson, 42, well-known chief engineer at Capital before the United merger, passed away suddenly in late September. **T. J. "Joe" Healey,** a pioneer in airline maintenance at American and more recently a staff assistant to v.p.-general manager G. Marion Sadler, died in October.

New TWA Los Angeles terminal...and more to come!

This is TWA's new terminal in Los Angeles. It is designed to bring greater service and dependability to today's jet-minded travelers. The latest of several new TWA terminals in major world centers, it includes all the newest TWA features created to speed your arrival and departure. You walk right through at the flight gate with TWA new jet check-in and boarding system. Your bags arrive faster than ever, thanks to the revolutionary new "carousel" baggage delivery system. You save time at both ends of your trip when you fly TWA . . . a leader in *on-time* performance among the major transcontinental airlines.

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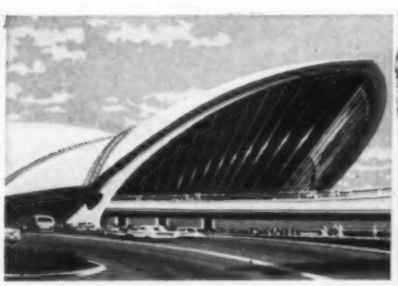
U.S.A. · EUROPE · AFRICA · ASIA

ROME—new TWA facilities serving Rome, opened this year in the new terminal at the Leonardo da Vinci Airport, Fiumicino.



NEW YORK—this TWA terminal soon to open at the International Airport reflects the jet age in soaring concrete.

CHICAGO—coming soon TWA's new, jet-age terminal with many new features of O'Hare International Airport.

Airlines Handed Responsibility For Keeping Drunks on Ground

By BRAD DUNBAR

Airlines now have direct responsibility for keeping drunks off their aircraft—a duty which they and their flight and ground-crew employes will share reluctantly under a final FAA rule now in effect. "No air carrier shall permit any person to board an air carrier aircraft if such person appears to be intoxicated," reads the new amendment to Parts 40, 41 and 42.

• Airlines won extension of the rule's incident-reporting period from 24 hrs. to five days—they had urged as much as 10 days. But they won little else. The final rule ignored ATA's plea that at best any such rule should prohibit an airline from "knowingly" permitting aboard its aircraft anyone who "obviously" is under the influence of liquor; a minor concession altered language to require an incident report, according to FAA, only when a passenger persisted in violating the proviously-adopted FAA rule banning drinking from his own bottle.

• In another major rulemaking, FAA proposed extension of flight recorder requirements to general aviation as well as air carrier turbine aircraft which weigh more than 12,500 lbs. or operate above 25,000 ft. The proposed Part 43 amendment would "clarify" existing continuation-of-flight provisions for the anti-collision light and use this requirement for the continuation-of-flight terms of the recorder rule. This would enable general aviation, unlike air carriers, to continue a flight with a malfunctioning recorder to a stop where repairs can be made without an "undue" delay in planned operations. Comment is due on the proposal no later than Dec. 21.

In routine rulemaking:

• IFR "course to be flown" definition would be changed under proposed rulemaking to make clear that aircraft in controlled airspace should be flown along the airway centerline or a direct course between navaids, with stated exceptions . . . A final rule made a number of realignments in distant early warning air defense identification zones (ADIZ and DEWIZ), turning down ATA's recommendation that normal position reporting procedures of IFR aircraft be considered adequate for ADIZ reporting. The rule took effect Nov. 16.

WANT TO WRITE RULES?

Ever cussed out those #*@¼(¢% Civil Air Regulations and sworn you could write them plainer yourself? FAA is giving you the chance: An agency announcement at AIRLIFT presstime invited industry comment on the "form and content" of its recodification (AIRLIFT, Nov.) of CARs and related regulatory material. An "outline" of the codification plan was due for publication in the FEDERAL REGISTER. Written comments should go to the Director of Rules Codification, FAA, 1711 New York Ave., NW, Washington 25, D.C., no later than Feb. 1.

VIOLATIONS

FAA enforcement division has imposed a 60-day ATR suspension on **Capt. Stewart W. Hopkins, Delta Air Lines'** No. 1 active pilot and a safety award winner, for a bad-weather landing at Dallas last winter which wound up off the edge of the runway. Hopkins promptly announced he would appeal to CAB.

Few of FAA's cases have raised as many eyebrows.

Pilots immediately pointed to the certificate action against a highly respected, veteran pilot, as symptomatic of basic flaws in the agency's enforcement machinery. Their cry is—and has been—that imposing fines or pay losses on errant pilots serves no useful purpose; retraining is their proposed substitute. FAA undoubtedly would balk at any such "toothless" enforcement action.

The agency based its ATR suspension on Hopkins' use of reverse thrust on the inboard engines of his DC-8 while flaps were extended—a procedure prohibited in the DC-8 manual. Reverse thrust in flight is an often-used speed-killing maneuver at altitude, but its use on landing was never a demonstrated, certificated maneuver for DC-8 landings.

The Dallas landing was on a critical runway length with maximum downwind component in marginal, 300-¾ weather, and with snow and sleet glazing the runway. The DC-8 overran side runway lights and came to a stop in mud some 550 ft. short of the end of the runway, damaging lights and the nose wheel section and breaking a high-voltage runway lighting cable.

Hopkins said the No. 2 engine thrust reverser bucket later was found open, convincing him that the same asymmetric reverse thrust problem which since has plagued the DC-8 caused his swerve off the runway. One of Delta's first DC-8 pilots, Hopkins was the 1958 Daedalian civilian flight safety award winner for "outstanding airmanship" in taking a DC-7 safely into Friendship Airport with runway No. 3 and 4 propellers and an uncontrollable No. 4 engine fire.

• Another appealed pilot action saw **Morrell J. Roddy,** former **Capital Airlines** pilot, asking the U.S. Court of Appeals for the District of Columbia to review a CAB refusal to set aside its order revoking his certificates and ratings. Roddy accused FAA of two improper ex parte communications to CAB while his case was pending—letters dealing with FAA's position in the case, and which CAB returned to FAA. The case involved Roddy's unapproved replacement as pilot-in-command by another pilot on a Capital flight.

• The agency's enforcement docket also showed an unusually heavy crop of requests for federal court actions against pilots who had failed to pay or to compromise FAA's proposed fines. They involved **Eastern Air Lines Capt. Otho M. Cockes, Jr.,** Miami, Fla., fined $1,000 for what FAA said was a deliberate blasting of a Southern Airways DC-3 and its ramp crew with the prop wash of his DC-7B on a Jacksonville ramp shortly after the outbreak of the Southern pilot strike; Pilot-in-command **Charles F. Hammer,** Hampton, N.H., and co-pilot **Gerald M. Darby,** Exeter, N.H., $500 each, for landing their EAL Electra in an "unusable" construction area 450 ft. short of the threshold of Runway 13 at LaGuardia Sept. 26, 1960; and **Capt. Benoit Carton, Jr.,** offered a $150 fine for cancelling his IFR flight plan and flying his **Ozark Air Lines** DC-3 in and out of Ottumwa, Iowa, Dec. 28, 1960, when the field's visibility already had gone under VFR minimums.

• Other violations: A 15-day ATR suspension for **Delta Air Lines Capt. E. A. Latka,** LaGrange, Ill., for an April 7, 1961 flight which FAA said exceeded its ATC altitude clearance, putting the airliner within a reported four minutes of another IFR flight over Falmouth, Ky. . . . A $1,000 fine for **McCauley Industrial Corp.,** Dayton, Ohio, for releasing to service a "number" of defective propeller blades . . . Seven-day ATR suspensions for **Capt. David T. Mohrmann,** and his co-pilot, **Sidney P. Howe,** both Metairie, La., for failing to maintain their cleared altitude . . . A $500 fine paid by **TWA** for a November, 1960 maintenance incident which put a 1049 Constellation into service with one blade on its No. 1 propeller set at five degrees less pitch than the prop's other two blades . . . A $100 fine paid by **Executive Business Transport Inc.,** Anchorage, for two failures to make the main-gear disassembly and inspection on a C-46 required by an airworthiness directive . . . A $200 fine paid by **Airline Transport Carriers, Inc.,** Burbank, for "several instances" in 1960 of failure to perform maintenance or overhaul equipment at manual times . . . A $50 fine paid by **Ernest E. Godin,** Ypsilanti, Mich., **Capital Airlines** mechanic whom FAA said failed to secure the throttle end on a Capital Viscount, causing an aborted take-off Sept. 9, 1960. ■

EQUIPMENT

Sudan—Sudan Airways is planning a small jet fleet and is expected to order Boeing 720Bs in the near future.

Malaya—Search for a DC-3 replacement by Malayan Airways has narrowed to the Avro 748, Fokker F-27 and Handley Page Herald. Order is expected soon.

Bombay—Air India International has ordered two additional 707 Intercontinentals bringing its fleet to six. Powerplants will be Rolls-Royce Conways and delivery is slated for March-April 1962.

U.S.—Fairchild has sold an F-27 to IBM bringing to 88 its total F-27 sales.

Wien Alaska Airlines has bought a single-engine Pilatus Porter, a seven-passenger, Swiss-built cargo/passenger model for bush operations. Northern Consolidated is also considered to be a likely customer for the Porter.

Tokyo—Final assembly of Japan's first postwar transport, the twin Dart YS-11 is underway at Mitsubishi Heavy Industries. Nihon Manufacturing Co., its builder, plans first test flight in March and completion of a second prototype early in 1962.

San Diego—Convair 990 has been granted provisional FAA certification with full licensing expected sometime this month.

Amsterdam—Fokker has received orders from All-Nippon Airways (Japan) for four additional F-27s and from Indian Airlines for five. Fokker has now sold 120 of the twin-turboprops.

Helicopters—Sikorsky S-61L transport helicopter has been awarded FAA certificate for maximum speed of 150 mph at 19,000 lbs. gross weight. It has been ordered by Chicago Helicopter Airways and Los Angeles Airways.

On the block—BOAC during the next twelve months will retire and sell its 14 Britannia 102 turboprops, retaining the 17 Britannia 312s. It is also offering eight DC-7Cs but will hold two for cargo use.

West Coast Airlines has purchased another Fairchild F-27, its seventh, through an aircraft brokerage firm at a price of about $700,000. It was due for delivery in late November making, it available for extra services over the holidays.

North Central Airlines has taken delivery of its tenth Convair 340/440 which it purchased from Delta Air Lines. NOR also retired its first DC-3, a Navy leased aircraft, reducing its Douglas fleet to 31.

AIRPORTS

Northern Ireland—RAF Aldergrove will become new civil air terminal here replacing Nutts Corner. New $2.1 million terminal will be built for 1963 opening.

Prestwick—A new $8.4 million terminal is under construction at Prestwick, Scotland, designed to handle up to 600,000 domestic and international passengers a year.

New terminal—On October 24, Nashville opened its new $4.5 million terminal flanked by two concourses which park 14 aircraft with growth potential for 22 positions.

Facility includes a lobby seating 200 persons, a new Sky Chef restaurant accommodating 300 patrons, a nursery, bank and a 24-hr. parking lot operated by Airport Parking Co. for 750 cars. Total terminal floor area is 192,340 sq. ft.

San Juan—Puerto Rico Ports Authority has budgeted a $10 million expansion for San Juan International Airport to handle an expected 4.1 million passengers in 1970.

Runways will be extended from 7800 to 10,000 ft., a new $1.5 million international and domestic traffic building is planned and eventually another terminal building will be added, increasing gate positions from 10 to 24. The airport now nets $400,000 on $1.8 million gross income.

CARGO

Freight trims fares—British European Airways' 2.33¢ per mile fares to Scotland and Belfast, introduced on November 1, have been made possible by a new night mail, newspaper and freight service operated by BEA out of London. Both Vanguards and Viscounts are used.

British General Post Office officials estimate that some 41 million letters a year will be delivered 24 hours earlier in England, Scotland and Northern Ireland as a result of the new service. Among London newspapers participating in the air service are the *Times, Daily Telegraph* and *Financial Times.*

TRAINING

Changing courses—After 25 years of specializing in vocational airline courses, Central Training Institute, Kansas City, on December 15 will cease to accept enrollments in home study airline courses.

In successive steps between now and December 1962 it will close its west coast branch (April 30); discontinue enrollments in Kansas City and Hartford (July 1); sell its Hartford school (Dec. 15) and complete or expire all airline home study contracts (Dec. 31).

Since 1936 Central has supplied the airlines with about 17,000 employes from its student body. The reason for the decision, says CTI's president, C. L. Foster, is the swiftly changing scene which has brought many new airline procedures and automation of clerical functions to the point where most office positions will probably be filled by applicants without pre-employment training.

ELECTRONICS

Raytheon Corp. has won a $1,583,000 follow-on contract from FAA for surveillance radar bright display equipment.

Continental Air Lines is buying **Collins Radio Co.'s** FD-105 integrated flight system for its 707 jet fleet at a cost of $68,502.

French research and development center at Bretigny, near Paris, is being fitted

NEW ARGOSY in airline service is British European Airways' version which began operation between London and Milan Nov. 26. BEA will get three and expects to have all in operation by Jan. 31.

with an ILS system incorporating a directional localizer built by **Pye Telecommunications Ltd.**

Short Brothers & Harland Ltd. have selected the **Ekco Electronics Ltd.** airborne weather radar for ten Belfast airfreighters now being built. King Saud of Saudi Arabia also ordered the Ekco radar for his Comet 4.

Raytheon has announced plans for major expansion of its newly acquired British subsidiary, **A. C. Cossor, Ltd.**

FAA has increased its contract with **Servo Corp. of America** to $2.7 million for purchase of 190 VHF/UHV doppler direction finders.

NEW BUSINESS

Phillips Petroleum Co. has licensed Union Carbide Corp. and Dow Chemical to produce its new jet fuel anti-icing additive 55MB.

Sperry Gyroscope Co. has a one-year contract from FAA to study pilot reactions to threat of mid-air collision. Project involves $85,000 and will be conducted at FAA's Atlantic City test facility.

Astek Instrument Corp. has named Railway & Power Engineering Corp. Ltd., of Montreal as its exclusive sales representative in Canada.

Astek recently landed its first airline transport order, a commitment from Sud Aviation for its airspeedata—a combination airspeed indicator and machmeter.

MISCELLANY

Retirement—Maurice Bellonte, head of France's standing committee on aviation accident investigation, retired at the end of October and was succeeded by Gen. Eng. Louis Bonte, former head of the French aviation administration.

Cabin flying—KLM is boasting the first stewardess with 15,000 flying hours to her credit. Miss Riet Kremer joined the airline in 1939 and retires at year-end as KLM's senior stewardess.

Out to pasture—The "Sacred Cow," DC-4 used by U.S. presidents Roosevelt and Truman is being retired to the Smithsonian Institution after 17 years of service. Built at Douglas-Santa Monica in June 1944, it carries the markings of 55 countries visited during its high-level diplomatic tour of duty.

Airline Oscars—Hawaiian Airlines color film "Our Islands of Hawaii" and Pan Am's "Wings Over Bermuda" won top awards in the first annual film festival of American Society of Travel Agents in Cannes recently.

Panagra cited—Government of Chile has given Panagra a special airlift decoration in recognition of the carrier's assistance during the earthquakes and tidal waves which hit the country in 1960.

Merrill-well finish—On Oct. 3, after check-piloting a DC-8 from New York to Miami, one of the oldest of the old-timers among airline pilots retired from active duty. Eastern Air Lines' H. T. "Dick" Merrill, at 67, wound up a career of 33 years of flying for EAL, with some 37,000 hours and about 8 million miles behind him. There are few, if any, that could top his statistics. Among those on hand to greet him in Miami was an informal honor guard of old-time pilots, 30 of which had more than 25 years of service with Eastern. Merrill will continue as a consultant to Eastern.

Air show—Italy is planning an international air show in Turin in 1962 and, if successful, will schedule the event every other year (between Paris shows). Fiat reportedly is backing the plan.

No meeting—IATA air cargo symposium slated for next April in Lucerne has been canceled.

Advertising—Allegheny Airlines is launching a novel ad campaign in eastern editions of *Sports Illustrated* and *The Wall Street Journal* stressing its "personality" as a businessman's short-haul, few-frills, commuter airline. Its agency is VanSant, Dugdale & Co., Baltimore.

'Copter study—New York Airways, Pan Am and Pakistan International Airways have entered agreement under which NYA will survey East Pakistan to study feasibility of helicopter operation, reporting its findings to PAA. Project falls under Pan Am's technical cooperation program in Pakistan under U.S. Agency for International Development.

ATCA head—Air Traffic Control Assn. has elected E. H. Cockerham as executive director with a three-year contract at about $18,000 a year. He is resigning from FAA.

MODEL 61-M2 • Complete with all equipment you will ever need • Reliable electric control system • Positive cable anti-fouling device • Improved brakes • Load limit clutch • Limit switches • Emergency hand crank • and a choice of 400-cycle AC or 28-volt DC motors.

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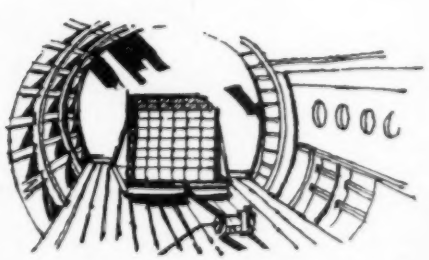
MINIATURIZATION IN CARGO WINCHES

AIR CARGO OPERATORS:

Carry your cargo loading and handling equipment with you!

Reduce your heavy cargo handling manpower!

Portable • easily stowed • makes heavily loaded aircraft self-sustaining at remote air fields.



Single hoist AAE systems are used aboard air-cargo carriers for swift, accurate handling of heavy loads. Average weight only 55 lbs.

ON-TIME BOXSCORE

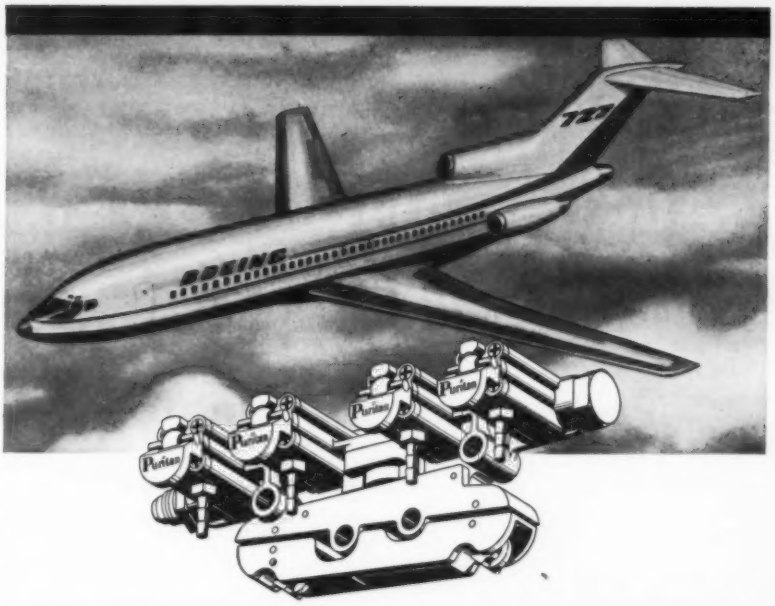
SEPTEMBER, 1961

Airline Ranking		Total Trips	On time to 15 min. late
TRUNKS			
1	Eastern	6044	88.6%
2	Braniff	1094	83.6
3	American	6097	80.6
4	Continental	1491	77.2
5	Western	1296	69.2
6	United	6566	69.0
7	Northeast	2160	68.3
8	Delta	2092	67.3
9	National	No Report	
10	Northwest	No Report	
11	TWA	No Report	
707 & DC-8			
1	Eastern	775	82.5%
2	Braniff	252	75.3
3	American	2105	70.4
4	Continental	497	70.2
5	Delta	466	60.3
6	Western	237	56.9
7	United	1279	56.4
8	National	No Report	
9	Northwest	No Report	
10	TWA	No Report	
720			
1	Eastern	13	76.9%
2	United	852	60.2
3	Western	274	32.4
4	Northwest	No Report	
880			
1	Northeast	372	56.1%
2	Delta	382	51.8
3	TWA	No Report	
CARAVELLE			
1	United	366	67.4%
ELECTRA			
1	Eastern	1330	82.5%
2	Western	532	81.0
3	Braniff	173	79.7
4	American	636	68.5
5	National	No Report	
6	Northwest	No Report	
LOCAL SERVICE			
1	West Coast	248	98.7%
2	Piedmont	31	96.7
3	Trans-Texas	232	88.7
4	Pacific	60	88.3
5	Ozark	582	87.2
6	Southern	462	86.1
7	Bonanza	474	80.5
8	North Central	1101	79.1
9	Mohawk	306	77.7
10	Central	242	75.2
11	Frontier	404	74.2
12	Allegheny	358	72.3
13	Lake Central	347	72.0

LATE REPORTS

AUGUST, 1961

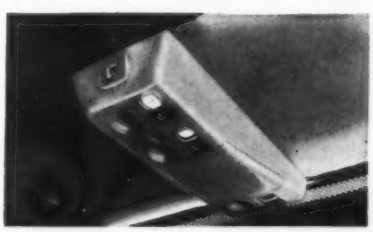
TRUNKS			
	TWA	3303	82.8%
	United	6880	68.8
& DC-8			
	TWA	1212	80.3%
	United	1314	48.4
	United	910	60.8%
	TWA	721	72.6%
CARAVELLE			
	United	243	65.8%



PURITAN RIDES the BOEING 727

. . . FOR GREATER PASSENGER SAFETY. Puritan's automatic valve assembly for passenger outlet stations has been specified for the oxygen breathing systems in the Boeing 727. It is a compact, integrated unit with all the valves and the latch combined, and enables passengers to be supplied with emergency oxygen if needed.

Your inquiry on any problem concerning high altitude breathing systems and equipment would be welcome.



Puritan's automatic valve assembly is mounted in the Passenger Service unit above the passengers, and in the lavatories.

AEROSPACE DIVISION
Puritan EQUIPMENT, INC.
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A subsidiary of PURITAN COMPRESSED GAS CORPORATION

BREATHING LIFE INTO AIR AND SPACE TRAVEL

Cost Talk Dominates ATA Session

By JOSEPH S. MURPHY

at Miami Beach

AIRLINE MAINTENANCE and engineering in this day of jets is undergoing its most taxing transition. There are big problems still to be licked, but with the first two years behind them, the technical brains and brawn which kept the piston planes conditioned are proving they can do a bigger and better job with jets.

This was the over-riding impression of this writer at the close of a three-day engineering and maintenance conference sponsored by the Air Transport Assn. The ATA session, highlighted by the announcement of FAA/industry trials of a new method to monitor airline mechanical reliability, also produced these significant points:

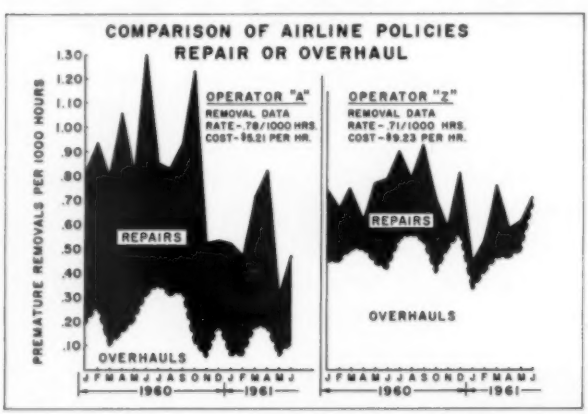
• The jet engine has proven itself time and again the most reliable piece of gear ever to find its way into an airline overhaul shop. But despite this phonomenal reliability record, the early lethargy on the part of FAA to recognize it has cost the airlines a fortune in stunted overhaul lives.

In contrast, the British Air Registration Board has been awake to the times and has granted overhaul periods as much as 1000 hrs. higher during the same time span. But FAA policies have been changing under the direction of Flight Standards director George Prill and the outlook is more promising.

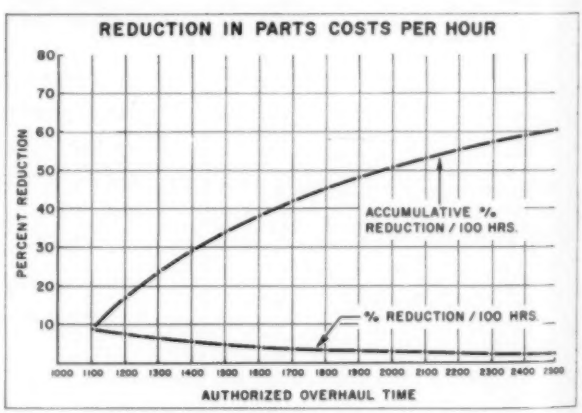
• Jet overhaul costs are running far below original manufacturer estimates. For example, reported Pratt & Whitney's R. G. Bentzinger, the parts costs at first overhaul of a JT3C jet is running only 3% of total engine price against an estimate of 8%. Instead of 10% at second overhaul, 12% at third, and 14% at fourth overhaul, the actual cost is running only 5% at fifth overhaul. Similarly, the JT4 has increased even less, from 2.75% at first overhaul to 3% at fourth overhaul.

General Electric's T. J. Harris told the ATA session that CJ805 engines are showing materials costs of about $7800 for first overhauls or $6.50 per flight hour based on a 1200-hour period. Average labor for the first 15 engines was 1500 manhours, although GE expects to cut this to 900 manhours when the 200th overhaul is reached.

• Using figures that make a U.S. big jet operator green with envy, Rolls-Royce's C. R. Creighton said the Dart engine has now achieved a 3500-hr. overhaul time, the Avon in Comets 3200 and in Caravelles 1800 hrs. In the most provocative talk given at the ATA meeting, Creighton suggested that the high overhaul times growing out of the jet's fantastic reliability makes it seem inevitable that airlines will progressively move out of the jet overhaul business toward use of specialist organizations.



HOW PRACTICES VARY in handling repairable engines. Operator A (left) had lower cost performance.


REDUCTION IN PARTS COSTS PER HOUR
PERCENT REDUCTION
ACCUMULATIVE % REDUCTION / 100 HRS.
% REDUCTION / 100 HRS.
AUTHORIZED OVERHAUL TIME

HOW OVERHAUL EXTENSIONS cut costs. An increase from 2000 to 2500 hrs. means 4% to 5% saving per 100 hrs.

It takes a big fleet

Assuming six engines per week as the least turnover on which a shop can attain reasonable labor efficiency, Creighton noted that a 3000-hr. overhaul period and 85% achievement of

this life would imply a minimum fleet of 80 four-engine jets would be needed to justify an airline engine shop.

Creighton also urged airline heads to take a close look at the administration of component part lives on jets. Costs depend greatly on part lives and the potential life of many parts is entirely independent of overhaul period, he said. The airlines in general are not getting the economic best out of turbine engines for reasons essentially of an administrative nature and Rolls-Royce experience over the past eight years suggests that a clearer recognition of the importance of part lives as a separate issue from overhaul time could be a key to improved operating economics.

Stagger major parts

Creighton presented the ATA session with an extract from the R-R manual on the control of component lives, a document which should spur new thinking among airlines toward improved overhaul economics. As one strong point of interest, the manual favors artifical time-staggering of major jet parts so that their lives are evenly spaced over the engines in operation of savings in parts costs with increasing overhaul time. An 11% reduction in parts' costs is realized if TBO goes from 1500 to 1800 hrs. and a 23% reduction going from 1000 to 1300 hrs. This means for every $1 million spent for parts, an operator can save between $110,000 and $230,000.

FAA reliability program

• Although the details remain to be formalized, FAA and U.S. airlines have reached tentative agreement on a method by which FAA will monitor the mechanical reliability of operations. Some seven airlines will submit to trial evaluation (American, United, TWA, Continental, Riddle, Piedmont and West Coast.)

Basically, it will tie reliability to engine shutdowns per 10,000 hrs., but will be disassociated with FAA's administration of airline requests for engine time extensions. In other words, if no factor exists which would limit time extensions, FAA will grant them.

As a base against which to work, FAA and airlines have devised an engine shutdown reliability index for different aircraft/engine combinations. If a carrier's three-month performance, to be reported on the 10th of each month, is poorer than the index, FAA and that carrier will launch a joint study to find out why.

Engine times won't suffer

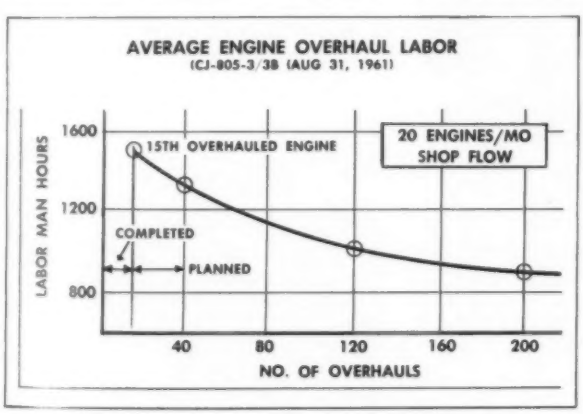
Instead of imposing precautionary engine time restrictions as in the past, they will probe all possible sources for the drop in reliability—training, pilot procedures, line maintenance, overhaul practices, etc. If airlines and FAA can't agree on a course of action, it will be referred to regional FAA or eventually to headquarters. The possibility of a team of experts to resolve such conflicts is being considered.

• FAA's George Prill gave airlines the reassuring news that they will be given more and more latitude to run their own airline maintenance, but as this takes place, FAA is going to have to become better informed of what is actually happening in day to day operations. The Daily Mechanical Report, said Prill, is no good and FAA is finding that ten times the number of problems reported in DMR's are taking place in some instances. Prill said his office will soon organize an automatic data processing activity to collect the information the agency needs for monitoring overall airline results.

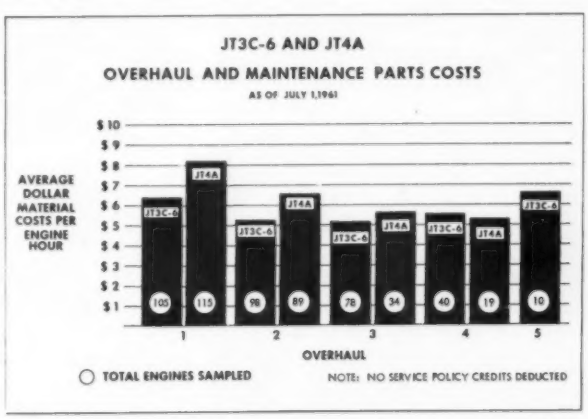
Conference notes: North Central Airlines' foremen are now organized under the American Airlines Supervisors Assn. AFL-CIO as the result of a recent representation election. **Elwynn Boock,** Ozark, will be chairman of local airline session of ATA meeting in 1962 and A. Dufault, Northern Consolidated is vice chairman.

Meeting coordinators—Airline chairman for 1962 meetings with manufacturers will be: Allison (Braniff); Boeing (Continental); Convair (TWA); Douglas (Delta); General Electric (Northeast); Lockheed (Northwest); P&W (American); Rolls-Royce (United); and Fairchild (Bonanza) . . . **C. B. "Speedy" Wilder,** Delta's asst. v.p.-operations—technical, was elected 1962 ATA meeting chairman and Los Angeles was voted as the favored site.

Airline attendance was strong, with every U.S. carrier except five locals represented. Among suppliers, in addition to the big name airplane and engine builders were: AiResearch Aviation Service; Champion Spark Plug Co.; Dallas Airmotive; Duracote Corp.; Frank G. Hough Co.; Lockheed Aircraft Service; Motor Generator Corp.; Shell Oil Co.; Texaco; Thompson Aircraft Tire Corp. and Wollard Aircraft Service. ■



HOW GE FORECASTS manpower reduction in CJ-805 overhaul as learning curve approaches the 200 engine mark.



HOW P&W PARTS COSTS per engine hour are holding their own through the first five overhauls.

to keep the size of protection stocks at a minimum and to avoid a sudden heavy spares requirement.

In this same area of airline technical management, Curtiss-Wright's W. E. Van Duyne noted that many Turbo Compound engines are being overhauled which could be repaired and returned to service with considerable savings in materials and labor. Van Duyne cited the comparison of airline A and Z (see chart) in which the airline with the higher premature removal rate (0.78 against 0.71) had a cost of only $5.21 per operating hour compared to $9.23 simply by repairing engines and returning them to service.

Van Duyne stressed the significance

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NEW PRODUCTS

Load Control Computer

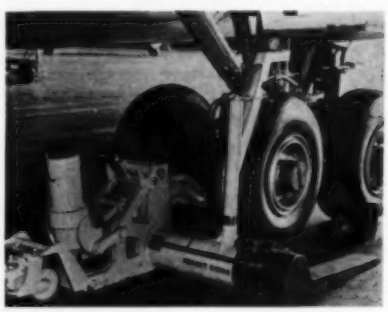
An electronic computer system for load control and passenger check-in has been installed for SAS at Kastrup Airport, Copenhagen, by Standard Telephones and Cables, Ltd. of London and its associated company, Standard Elektrik Lorenz, of Stuttgart.

A Stantec Zebra Computer, providing data storage and computational facilities, is connected to input keysets at check-in counters. Master sets for output are situated at the load-control center.

Receptionists key passenger data on input keysets. Check-in data from all counters is fed to the computer, which calculates weight of passengers and luggage. Master sets at load-control are used for the input of basic aircraft data: fuel, crew baggage, aircraft type.

Result can appear either on a teleprinter system or on a five, six or seven digit-in-line projection display.

Jet Jack



A new 40-ton capacity landing gear jack for jet transports, developed by Regent Jack Co., offers the attractive addition of a wheel boom and sling that takes the labor out of wheel changes. Called the Rhino, the new Regent jack has been ordered by United, American, TWA, Northeast and Pakistan International Airlines.

The Rhino has a minimum height of 3.5 in. and extends to 22.5 in. Overall dimensions are 27 x 80 x 82 in., ground clearance is 2 in. and weight is about 2000 lbs.

The wheel removal boom has a 500-lb. capacity, a 46.5-in. minimum height and includes a sling which accommodates tires up to 50 in. outside diameter.

VHF ADF

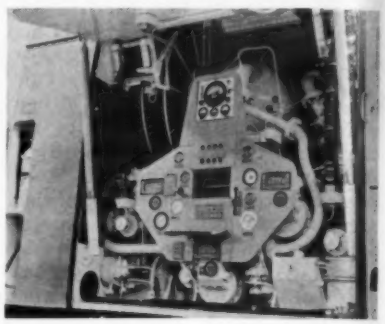
A ground-based VHF automatic direction finder which uses a rotating antenna to provide a true Doppler effect is being offered by Standard Telephones and Cables Ltd. The unit differs from conventional long base-line direction-finder equipment which simulate the Doppler effect.

The new system is designed to be less costly and less complex than existing systems. Accuracy is said to be improved over conventional direction finders, with maintenance requirements less stringent.

The use of a long base-line increases accuracy, helping to eliminate the effect of unwanted reflections. Weather protection is available for all climatic conditions.

Aquascan

Trans-Canada Air Lines has begun using a fuel purity measuring device manufactured by the British Petroleum Co., Ltd. which determines the amount of un-



dissolved water in jet fuel by measuring its light transmission ability.

The Air BP "Aquascan" continuously measures the undissolved water present in jet fuel as it is pumped into the aircraft. If the fuel at any time during the fueling operation exceeds the acceptable limit of 30 parts per million, the pumping operation stops.

The "Aquascan" unit is about the size of a television set. Mounted in a tanker truck, it optically compares the light transmission quality of a heated reference sample of fuel with fuel being delivered to the aircraft. The difference in light absorption is measured and shown on a dial calibrated in parts of undissolved water per million parts of fuel.

TCA presently is using "Aquascan" only at Montreal, but expects to equip other stations as the units become available.

Mobile Bridge

Europe's first mobile passage for loading and unloading passengers was put into experimental service at Amsterdam's Schiphol airport in June. The unit is the prototype "Aviobridge" built by Aviolanda, the Dutch aircraft company with headquarters in Papendrecht. Built in three telescoping sections, the bridge has a maximum extended length of 118 ft. and a minimum retracted length of 60 ft. Position of the hydraulically-operated Aviobridge to the aircraft entrance takes a maximum of 90 seconds including rotation through 90 degrees.

Aviolanda has spent some $400,000 on developing the Aviobridge in the past few years. It anticipates being able to offer production units for $75,000.

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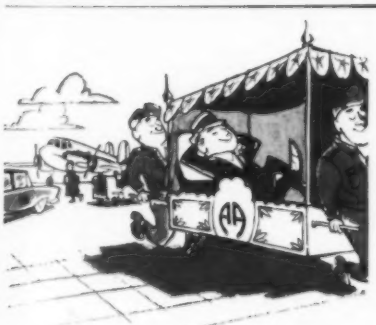

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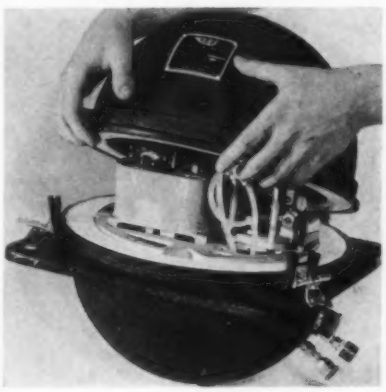
is being marketed by Mine Safety Appliances Co., Pittsburgh.

The demand regulator permits feeding of air to facepiece only when the wearer inhales. This conserves air supply, allowing one wearer up to eight hours of service from a standard 220 cu.ft. air cylinder.

Three facepieces are available. The "Clearvue" and "All Vision" protect the entire face, for atmosphere irritating to the eyes. The custom "Comfo" half mask is offered for airline passenger use, has double exhalation valves for low breathing resistance.

Cockpit Recorder



Qantas Empire Airways has placed an order with Lockheed Aircraft Service for cockpit voice recorders in a quantity sufficient to equip the Australian carrier's entire turbine-powered fleet.

The new recorder, now under final development at Lockheed, records pilot and crew cockpit and air-to-ground conversation. It operates on a continuous loop, retaining an hour's record of conversation before erasure. The operation is continuous and repeatable.

The unit can be installed as an integral part of the Lockheed 109-C flight recorder now in service on many jet aircraft, or it can be installed separately.

Baggage Fee Computer

A combination airline baggage scale and high-speed computer which both calculates the fee and prepares the paper work for overweight baggage is being marketed by Triner Scale & Mfg. Co. The result of a three-year long joint development by Triner and TWA, it has been ordered by that carrier for use at its new terminals at Idlewild (N.Y.) and O'Hare (Chicago).

The Triner scale measures 22 x 36 x 34 in. and computer 17 x 11 x 24 in. Respective weights are 248 and 93 lbs. Keyboard accommodates standard 40, 44 and 66 lb. weight allowances for one to four persons. Pre-wired patch plugs can be provided for any destination rate schedule.

The computer also prepares a record in triplicate for excess baggage fees with the entire computation consuming only about three seconds. It also accepts such data as the number of passengers checking in, destinations and other information for airline records.

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EN ROUTE

By WAYNE W. PARRISH

Good Coffee, Bad Taxes ... And Expensive Hotels

Before Americans became completely daffy over early morning coffee, breakfast coffee, and coffee breaks every hour on the hour, they used to chide the British over their tea habit. The British have every right to do some chiding in return.

As a matter of fact, I like this early coffee business and am pleased to report some recent advances in that area.

In some of the better motels, such as the Hilton Inn opposite New Orleans International Airport, there is a nice little gadget to make your own coffee while shaving and dressing. Just press a little button and heat the water, add the hot water to a packet of instant coffee which the hotel thoughtfully provides, then add the sugar and powdered cream also provided, and presto, you have your morning coffee. Granted that you may not like this preparation as well as brewed coffee, it still is a convenient life saver.

Then take another development in the northwest. I've always thought the Western hotel chain was exceptionally well operated and am pleased to report that when you leave an early call at the Northern in Billings or the Rainbow in Great Falls (and I presume others in the chain), a waiter appears shortly after your awakening with piping hot coffee. This is what I call real service.

I can also report that a good motel near Stapleton Field in Denver, the Kearney, which caters to aviation folk, does the same thing if you have left an early call. Here you get a carafe of two full cups.

Even the airlines are awakening to this early coffee service. One morning recently I boarded an originating Continental 707 flight at Denver and found that all those who boarded early were being served coffee in their seats while reading the morning paper. Wonderful idea.

Snack tax in Georgia

Some readers of this page think I gripe an awful lot and I suppose I do but I'm only trying to improve the lot of the hapless traveler and to remove a lot of minor irritations here and there. So let me pass on one gripe which admittedly is petty but pertains to the transient unfamiliar with local taxes.

To use a specific example; you step up to the snack bar in the handsome new Atlanta terminal and it's crowded, as always, and you're in a hurry to make a flight, but you want a tomato juice on the run. So you order the tomato juice and look at the posted price list which says twenty cents, so you have your two dimes ready and start to dash away when the gal says hold up a minute, the price is twenty-one cents, meaning there's a sales tax.

So you shift your books and newspapers and fumble for that penny, or retrieve the two dimes and hand the gal a quarter and wait for four pennies change, and how much simpler and reasonable it would be for all airports to put the *exact* prices on the signs so people could have the exact change ready. Or, better yet, since twenty cents is close to robbery for a small glass of tomato juice, why doesn't the concessionaire absorb the tax?

IF ANYBODY CARES to know what it's like to fly the Atlantic in a twin-engine airplane, here's WWP (alert as always) in the GE Caravelle half way to Shannon last May.

Aviation in a jungle

Any time you think that the world is completely conquered by civilization, just remember there are plenty of wild places left here and there. Last fall when I had a fine flight to South Africa on Alitalia, the north-bound flight stopped late at night at Nairobi, Kenya Colony, in the heart of Africa. I was met there by F. Girelli, Alitalia's representative for that area, and in talking with him in the terminal I inquired about how far you had to go from Nairobi to see wild life. I got my answer fast. Why, he said quite casually, not very far. He had met a lion and some zebras while driving to the airport an hour earlier.

Good news at London

More and more fine motels have been going up on or near airports in the U.S., but it is a special pleasure to advise that there are two fine new ultra-modern installations across the road from London Airport, something of a brash departure from British conservatism.

CATCHING UP on photos that should have appeared long before this. At left, dapper Gastone Marchesani, Alitalia public relations, at Rome's new airport last February. At right, J. G. Grove, chief executive officer of South African Airways, snapped by WWP outside the Wanderers club there.

Steve Anderson, Trans-Canada Air Lines' most personable public relations maestro in London, took me through both places and I can recommend both—each has its distinctive features. One is Ariel Hotel, the first circular hotel in Europe, and nearby is Skyway Hotel, complete with swimming pool. Each has fine rooms, each has an excellent bar and restaurant. Both are on Bath Road, Hayes, Middlesex.

SHORT TAKES

I've stayed many times at well-situated Crillon Hotel on Place de la Concorde in Paris—but for the last time. At $28 per day (including taxes and service) for a double room with poor light, occasional hot water and one bath towel for two in ten days, I've had it. Paris hotels have gone overboard in charging . . .

At the Park Hotel in Amsterdam I had an amazing room—a sitting room on one level with an open staircase leading to a mezzanine with beds and bath, quite an arrangement. . . . Ralph Starke, manager of the new Amsterdam Hilton now being built for opening next year, sent over some flowers to the Park, so thanks—that's good salesmanship. . . . On New York's Park Avenue opposite the Waldorf is a Crane plumbing fixture showroom and wouldn't you guess, there's a nice pink thing prominently marked "The Bidet" discreetly displayed in the rear. . . .

KLM's Viscounts have the brightest, finest airplane interiors I've seen. . . . Glad to see Schiphol Airport in Amsterdam building a big new terminal. . . . If you've ever tried to transit from one carrier to another at London Central, you know what we mean—just about as bad as Idlewild and possibly even more confusing. . . .

KLM is now selling perfume packs at tax-free prices on its airplanes and this is one of the smartest ideas in years. . . . I'm surprised that Cointrin Airport at Geneva, a well-run and fine terminal, depends solely on voice for departure announcements; there isn't even a departure board outside the customs area, only a board showing arrivals.

Another hotel off my list: the Park Lane in London where I stayed during the black-out World War II days in 1944. Few months ago I stayed there again (how prices have gone up!) and was expecting a letter from a friend in Sweden. Never got it. Letter was returned "unclaimed" to my friend, but the Park Lane receiving stamp has on the envelope the very date I was in the hotel. Also, the porter failed to follow through on instructions about my baggage; sloppy and indifferent service. . . .

Thanks to Bill Sherrill and J. W. Eagleton, pilot and assistant pilot respectively of Shell Oil, for a fine flight in a Shell Dove from New York to Washington, complete with hot breakfast. . . . Speaking of breakfasts, if you're on a diet beware of Continental's jet layouts; absolutely delicious but devastatingly caloric. . . .

I think Northwest's practice of passing out steamed and perfumed face towels is the bestest. . . . Why don't airlines use aerosol fly sprays in the cabins in the summer to eliminate those pesky insects? . . .

I can't quite go for those new Neiman-Marcus-styled stewardess hats on Trans-Texas. . . . The new north terminal at Kansas City is inexpensive and modest, but awfully good and practical. . . . Continental has the smartest stewardess hats in the business. ■

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